2002 STANDARD DRAWINGS

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Change One, February 19, 2003

Memorandum UTAH DEPARTMENT OF TRANSPORTATION

DATE: February 19, 2003

TO: Region Directors
Project Engineers
Project Design Engineers
Project Managers
Consultants and Contractors

FROM: Barry Axelrod, CDT
Standards and Specifications

SUBJECT: Standard Drawing [U.S. Standard Unit (Inch-Pound Units)] Change 1 Dated February 19, 2003

A new index and updated drawings are attached. Please take the following action with respect to the attached pages.

REMOVE	**INSERT**
Index	Index - revised
Sheet 1C	Sheet 1C – revised
Sheet 1D	Sheet 1D – revised
AT 7	AT 7 – revised
BA 1A	BA 1A – revised
BA 1B	BA 1B – revised
BA 3	BA 3 – revised
BA 4B	BA 4B – revised
N/A	BA 4C – new
CC 6	CC 6 – revised
DG 3	DG 3 – revised
DG 4	DG 4 – revised
EN 4	EN 4 – revised
GW 1	GW 1 – revised
PV 2	PV 2 – revised
SL 13	SL 13 – revised
SN 2	SN 2 – revised
SN 4	SN 4 – revised
SN 5	SN 5 – revised
SN 8	SN 8 – revised
ST 1	ST 1 – revised
ST 7	ST 7 – revised
SW 3A	SW 3A – revised
SW 3B	SW 3B – revised
SW 4A	SW 4A – revised

Electronic files for all Standards Drawings are available from the Standards and Specifications Web page on the Internet. The files are in Adobe pdf format.

If you have any questions or problems with the electronic files contact me at (801) 964-4570 or by email at baxelrod@utah.gov.

STANDARD DRAWINGS INDEX (Change One, Dated 02/19/03)
UTAH DEPARTMENT OF TRANSPORTATION

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NUMBER	TITLE	CURRENT DATE
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SN 2	Flashing School Sign	12/19/02
SN 3	Overhead School Flasher	07/03/02
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SN 7	Placement of Ground Mounted Signs	07/03/02
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SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/02
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NUMBER	TITLE	CURRENT DATE
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Listing of Revised Standard Drawings

Change One

Revised December 19, 2002

AT 7	Polymer Concrete Junction Box Details	12/19/2002
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BA 1B	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 3	Cast In Place Constant Slope Barrier	12/19/2002
BA 4B	Beam Guardrail Installations	12/19/2002
BA 4C	Beam Guardrail Anchor Type I	12/19/2002
CC 6	Crash Cushion Type E Sand Barrel Details	12/19/2002
DG 3	Maximum Fill Height and End Sections for HDPE And PVC Pipes	12/19/2002
DG 4	Pipe Culverts Minimum Cover	12/19/2002
EN 4	Temporary Erosion Control (Drop-Inlet Barriers)	12/19/2002
GW 1	Raised Median and Plowable End Section	12/19/2002
PV 2	Pavement Approach Slab Details	12/19/2002
SL 13	Traffic Counting Loop Detector Details	12/19/2002
SN 2	Flashing School Sign	12/19/2002
SN 4	Flashing Stop Sign	12/19/2002
SN 5	Typical Installation For Milepost Signs	12/19/2002
SN 8	Ground Mounted Timber Sign Post (P1)	12/19/2002
ST 1	Object Marker “T” Intersection and Pavement Transition Guidance	12/19/2002
ST 7	Pavement Markings and Signs at Railroad Crossings	12/19/2002
SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/2002
SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/2002
SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/2002

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Advanced Traffic Management System (AT)	
AT 1	LEGEND SHEET	07-03-02
AT 2	RAMP METER DETAILS	07-03-02
AT 3	RAMP METER SIGN PANEL	07-03-02
AT 4	TYPICAL RAMP METER SIGNAL HEAD MOUNTING	07-03-02
AT 5	LOOP INSTALLATION	07-03-02
AT 6	CONDUIT DETAILS	07-03-02
AT 7	POLYMER-CONCRETE JUNCTION BOX DETAILS	12-19-02
AT 8	ATMS CABINET W/120V DISCONNECT	07-03-02
AT 9	ATMS CAB WITH STEPDOWN TRANSFORMER	07-03-02
AT 10	DOMED CCTV DETAILS	07-03-02
AT 11	CCTV POLE DETAIL	07-03-02
AT 12	CCTV POLE FOUNDATION FOR DEDICATED CCTV POLE	07-03-02
AT 13	120V VMS CAB FOUNDATION DETAILS	07-03-02
AT 14	WEIGHT IN MOTION PIEZO DETAIL	07-03-02
	Barriers (BA)	
BA 1A	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	12-19-02
BA 1B	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	12-19-02
BA 2	PRECAST CONCRETE HALF BARRIER STANDARD SECTION	07-03-02
BA 3	CAST IN PLACE CONSTANT SLOPE BARRIER	12-19-02
BA 4	BEAM GUARDRAIL HARDWARE	07-03-02
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CB 3	STANDARD TRANSITION CONCRETE LINED DITCH TO PIPE OR DIVERSION BOX	07-03-02
CB 4	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	07-03-02
CB 5	STANDARD SCREW GATE AND FRAME	07-03-02
CB 6A	STANDARD DROP INLET DETAILS GENERAL NOTES AND INSTALLATION DETAIL	07-03-02
CB 6B	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "A" DETAIL	07-03-02
CB 6C	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "B" DETAILS	07-03-02
CB 6D	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "C" DETAILS	07-03-02
CB 6E	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6F	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6G	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" DETAILS	07-03-02
CB 6H	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" TABLES	07-03-02
CB 7	STANDARD CURB AND GUTTER DROP INLET	07-03-02
CB 8A	DOUBLE CATCH BASIN	07-03-02
CB 8B	DOUBLE CATCH BASIN	07-03-02

DWG. NO.	DESCRIPTION	DATE
CB 9A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION & LAYOUT	07-03-02
CB 9B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	07-03-02
CB 9C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 18" TO 42" RCP 12" TO 48" CMP	07-03-02
CB 9D	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 48" TO 66" RCP 60" TO 78"CPM	07-03-02
CB 10A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION & LAYOUT	07-03-02
CB 10B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	07-03-02
CB 10C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 42" TO 60" RCP 48" TO 72" CMP	07-03-02
	Crash Cushions (CC)	
CC 1	CRASH CUSHION MARKINGS	07-03-02
CC 2	CRASH CUSHION DRAINAGE DETAILS GUIDELINE A	07-03-02
CC 3	CRASH CUSHION DRAINAGE DETAILS GUIDELINE B	07-03-02
CC 4	DETAIL FOR PLACEMENT CRASH CUSHIONS TYPE A, B & D	07-03-02
CC 5	GRADING & PLACEMENT DETAIL CRASH CUSHION TYPE C	07-03-02
CC 6	CRASH CUSHION TYPE E SAND BARREL DETAILS	12-19-02
CC 7	GRADING & INSTALLATION DETAILS CRASH CUSHIONS TYPE F, TYPE G	07-03-02
CC 8	GRADING & INSTALLATION DETAIL CRASH CUSHION TYPE H	07-03-02
	Diversion Boxes (DB)	
DB 1A	STANDARD DIVERSION BOX/COVER PLATE/GRATING FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1B	STANDARD DIVERSION BOX HINGED LID DETAIL FOR 18" DIA OR 24" DIA.PIPE	07-03-02
DB 1C	STANDARD DIVERSION BOX BICYCLE-SAFE GRATING DETAILS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1D	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1E	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 1F	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18"DIA. OR 24"DIA.PIPE	07-03-02
DB 2A	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, BOTTOM SLAB, WALLS AND APRON DETAIL	07-03-02
DB 2B	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, QUANTITIES SCHEDULE	07-03-02
DB 2C	STANDARD DIVERSION BOX W/INTERCHANGEABLE WALLS, HAND SLIDE GATE DETAILS	07-03-02
DB 2D	STANDARD DIVERSION BOX TYPE "G" HAND SLIDE GATE DETAILS	07-03-02
DB 2E	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE I PLAN	07-03-02
DB 2F	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE II PLAN	07-03-02
DB 2G	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B"DETAILS	07-03-02
DB 2H	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B" & "C"DETAILS	07-03-02
DB 3A	STANDARD DIVERSION BOX WITH MANHOLE COVER SITUATION & LAYOUT	07-03-02
DB 3B	STANDARD DIVERSION BOX WITH MANHOLE COVER UP TO 42" RCP AND UP TO 54" CMP	07-03-02
DB 3C	STANDARD DIVERSION BOX WITH MANHOLE COVER 48"TO 72" RCP AND 60"TO 84" CMP	07-03-02

DWG. NO.	DESCRIPTION	DATE
	Drainage (DG)	
DG 1	FILL HEIGHT FOR METAL PIPE (STEEL)	07-03-02
DG 2	FILL HEIGHT FOR METAL PIPE (ALUMINUM)	07-03-02
DG 3	MAXIMUM FILL HEIGHT AND END SECTIONS FOR HDPE AND PVC PIPES	12-19-02
DG 4	PIPE CULVERTS MINIMUM COVER	12-19-02
DG 5	PLASTIC PIPE, METAL PIPE OR PIPE ARCH CULVERT BEDDING	07-03-02
DG 6	PRECAST CONCRETE PIPE CULVERT	07-03-02
DG 7	GASKETTED JOINTS OR COUPLINGS BANDS FOR C.M.P.	07-03-02
DG 8	METAL CULVERT END SECTION	07-03-02
DG 9	MISCELLANEOUS PIPE DETAILS	07-03-02
	Environmental Controls (EN)	
EN 1	TEMPORARY EROSION CONTROL (CHECK DAMS)	07-03-02
EN 2	TEMPORARY EROSION CONTROL (SILT FENCE)	07-03-02
EN 3	TEMPORARY EROSION CONTROL (SLOPE DRAIN AND TEMPORARY BERM)	07-03-02
EN 4	TEMPORARY EROSION CONTROL (DROP INLET BARRIERS)	12-19-02
EN 5	TEMPORARY EROSION CONTROL (SEDIMENT TRAP AND CURB INLET BARRIER)	07-03-02
	Fence and Gates (FG)	
FG 1A	RIGHT OF WAY FENCE AND GATES (WOOD POST)	07-03-02
FG 1B	RIGHT OF WAY FENCE AND GATES (WOOD POST)	07-03-02
FG 2A	RIGHT OF WAY FENCE AND GATES (METAL POST)	07-03-02
FG 2B	RIGHT OF WAY FENCE AND GATES (METAL POST)	07-03-02
FG 3	SWING GATES TYPE 1 FOR GATES LESS THAN 17'	07-03-02
FG 4	DEER GATES	07-03-02
FG 5	SWING GATES TYPE II FOR GATES WIDER THAN 17'	07-03-02
FG 6	CHAIN LINK FENCE	07-03-02

☒ MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

REVISIONS

NO.	DATE	APPR.	REMARKS
1	02/19/03	B.A.	CHANGE 1

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

REVIEWED AND CHECKED — FEB.19,2003 DATE

CHECKED AND APPROVAL — FEB.19,2003 DATE

STANDARD ENGINEER

STANDARD DRAWING INDEX SHEET

STANDARD DRAWING TITLE

STD DWG
1-B

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

	DWG. NO.	DESCRIPTION	DATE
		Grates, Frames and Trash Racks (GF)	
	GF 1	MANHOLE FRAME AND GRATED COVER	07-03-02
	GF 2	MANHOLE FRAME AND SOLID COVER	07-03-02
	GF 3	RECTANGULAR GRATE & FRAME	07-03-02
	GF 4	DIRECTIONAL FLOW GRATE & FRAME	07-03-02
	GF 5	SOLID COVER & FRAME	07-03-02
	GF 6	MANHOLE STEPS	07-03-02
	GF 7	STANDARD SCREW GATE & FRAME	07-03-02
	GF 8	2' x 2' GATE AND FRAME	07-03-02
	GF 9	28" x 24" DIRECTIONAL FLOW GRATE AND FRAME	07-03-02
	GF 10	STANDARD TRASH RACKS 90° ANGLE X-ING L	07-03-02
	GF 11	STANDARD TRASH RACKS	07-03-02
	GF 12	STANDARD TRASH RACKS	07-03-02
		General Road Work (GW)	
	GW 1	RAISED MEDIAN AND PLOWABLE END SECTION	12-19-02
	GW 2	CONCRETE CURB AND GUTTER	07-03-02
	GW 3	CONCRETE CURB AND GUTTER DETAILS	07-03-02
	GW 4	CONCRETE DRIVEWAYS AND SIDEWALKS	07-03-02
	GW 5	PEDESTRIAN ACCESS	07-03-02
	GW 6	RIGHT OF WAY MARKER	07-03-02
	GW 7	NEWSPAPER AND MAILBOX STOP LAYOUT	07-03-02
	GW 8	NEWSPAPER AND MAILBOX SUPPORT HARDWARE	07-03-02
	GW 9	DELINEATION HARDWARE	07-03-02
	GW 10	DELINEATION APPLICATION	07-03-02
		Paving (PV)	
	PV 1	JOINTS FOR HIGHWAYS WITH CONCRETE TRAFFIC LANES AND SHOULDERS	07-03-02
	PV 2	PAVEMENT/APPROACH SLAB DETAILS	12-19-02
	PV 3	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	07-03-02
	PV 4	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	07-03-02
	PV 5	URBAN CONCRETE PAVEMENT DETAILS	07-03-02
	PV 6	RUMBLE STRIPS	07-03-02
	PV 7	RUMBLE STRIPS -TYPICAL APPLICATION	07-03-02
		Signals (SL)	
	SL 1	TRAFFIC SIGNALS MAST ARM POLE AND LUMINAIRE EXTENSION	07-03-02
	SL 2	TRAFFIC SIGNALS MAST ARM DETAIL 25' THRU 65'	07-03-02
	SL 3	UNDERGROUND SERVICE PEDESTAL DETAIL	07-03-02
	SL 4	TRAFFIC SIGNALS MAST ARM POLE FOUNDATION	07-03-02
	SL 5	BREAKAWAY POST MOUNTED TRAFFIC SIGNAL POLE	07-03-02
	SL 6	POWER SOURCE DETAILS	07-03-02
	SL 7	SPAN WIRE SIGNAL POLE DETAIL	07-03-02
	SL 8	SIGNAL HEAD DETAILS	07-03-02
	SL 9	PEDESTRIAN SIGNAL ASSEMBLY	07-03-02
	SL 10	CONTROLLER BASE DETAIL	07-03-02
	SL 11	TRAFFIC SIGNALS LOOP DETECTOR DETAIL	07-03-02
	SL 12	JUNCTION BOX DETAILS	07-03-02
	SL 13	TRAFFIC COUNTING LOOP DETECTOR DETAIL	12-19-02
	SL 14	LIGHT POLE BREAKAWAY BASE	07-03-02
	SL 15	LUMINARIE BREAKAWAY BASE DETAIL	07-03-02
	SL 16	SINGLE TRANSFORMER SUBSTATION DETAILS	07-03-02
	SL 17	LIGHT POLE ANCHOR BASE	07-03-02
	SL 18	LIGHT POLE FOUNDATION EXTENSION	07-03-02
		Signs (SN)	
	SN 1	BRIDGE LOAD LIMITS SIGNS	07-03-02
	SN 2	FLASHING SCHOOL SIGN	12-19-02
	SN 3	OVERHEAD SCHOOL FLASHER	07-03-02
	SN 4	FLASHING STOP SIGN	12-19-02
	SN 5	TYPICAL INSTALLATION FOR MILEPOST SIGNS	12-19-02
	SN 6	NOT USED	07-03-02
	SN 7	PLACEMENT OF GROUND MOUNTED SIGNS	07-03-02
	SN 8	GROUND MOUNTED TIMBER SIGN POST (P1)	12-19-02
	SN 9	GROUND MOUNTED TUBULAR STEEL SIGN POST (P2)	07-03-02
	SN 10	GROUND MOUNTED SQUARE STEEL SIGN POST (P3)	07-03-02
	SN 11	SLIPBASE GROUND MOUNTED TUBULAR STEEL SIGN POST (P-4)	07-03-02
	SN 12A	GROUND MOUNTED SIGN INSTALLATION DETAILS	07-03-02
	SN 12B	GROUND MOUNTED SIGN INSTALLATION DETAILS	07-03-02
	SN 12C	GROUND MOUNTED SIGN INSTALLATION DETAILS	07-03-02
		Striping (ST)	
	ST 1	OBJECT MARKERS "T" INTERSECTION & PAVEMENT TRANSITION GUIDANCE	12-19-02
	ST 2	FREEWAY TURN AROUND MARKINGS	07-03-02
	ST 3	TYPICAL PAVEMENT MARKINGS	07-03-02
	ST 4	CROSSWALKS, PARKING AND INTERSECTION APPROACHES	07-03-02
	ST 5	PAINTED MEDIAN & AUXILIARY LANE DETAILS	07-03-02
	ST 6	PASSING/CLIMBING LANES TRAFFIC CONTROL	07-03-02
	ST 7	PAVEMENT MARKINGS AND SIGNS AT RAILROAD CROSSING	12-19-02
	ST 8	PLOWABLE PAVEMENT MARKERS	07-03-02
	SW 1A	**Structures and Walls (SW)** WELDED END GUARD UNIT	07-03-02
	SW 1B	PRECAST CONCRETE CATTLE GUARD	07-03-02
	SW 2	NOISE WALL PLACEMENT AREA	07-03-02
	SW 3A	PRECAST CONCRETE NOISE WALL 1 OF 2	12-19-02
	SW 3B	PRECAST CONCRETE NOISE WALL 2 0F 2	12-19-02
	SW 4A	PRECAST CONCRETE RETAINING/NOISE WALL 1 OF 2	12-19-02
	SW 4B	PRECAST CONCRETE RETAINING/NOISE WALL 2 OF 2	07-03-02
	TC 1A	**Traffic Control (TC)** CONSTRUCTION ZONE CHANNELIZATION DEVICES	07-03-02
	TC 1B	CONSTRUCTION ZONE SIGNING	07-03-02
	TC 2A	TRAFFIC CONTROL GENERAL	07-03-02
	TC 2B	TRAFFIC CONTROL GENERAL	07-03-02
	TC 3	TRAFFIC CONTROL PROJECT LIMIT SIGNING	07-03-02
	TC 4	TRAFFIC CONTROL URBAN INTERSECTION WITH ROADWAYS UNDER 50 MPH	07-03-02
	TC 5	TRAFFIC CONTROL URBAN INTERSECTION WITH ROADWAYS UNDER 50 MPH	07-03-02
	TC 6	TRAFFIC CONTROL PEDESTRIAN ROUTING	07-03-02
	TC 7	TRAFFIC CONTROL ROAD CLOSURE, DETOUR	07-03-02
	TC 8	TRAFFIC CONTROL LANE CLOSURE	07-03-02
	TC 9	TRAFFIC CONTROL MULTILANE CLOSURE	07-03-02
	TC 10	TRAFFIC CONTROL EXPRESSWAY AND FREEWAY CROSSOVER/ TURN AROUND	07-03-02
	TC 11	TRAFFIC CONTROL EXIT RAMP GORE	07-03-02
	TC 12	TRAFFIC CONTROL ENTRANCE RAMP GORE	07-03-02
	TC 13	TRAFFIC CONTROL SHOULDER-HAUL ROAD	07-03-02
	TC 14	TRAFFIC CONTROL FLAGGING OPERATION	07-03-02
	TC 15	TRAFFIC CONTROL 2 LANE / 2 WAY SEAL COAT WITH COVER MATERIAL	07-03-02
	TC 16	TRAFFIC CONTROL PAVEMENT MARKING	07-03-02

☒ **MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT**

REVISIONS

NO.	DATE	APPR.	REMARKS
1	02/19/03	B.A.	CHANGE 1

UTAH DEPARTMENT OF TRANSPORTATION
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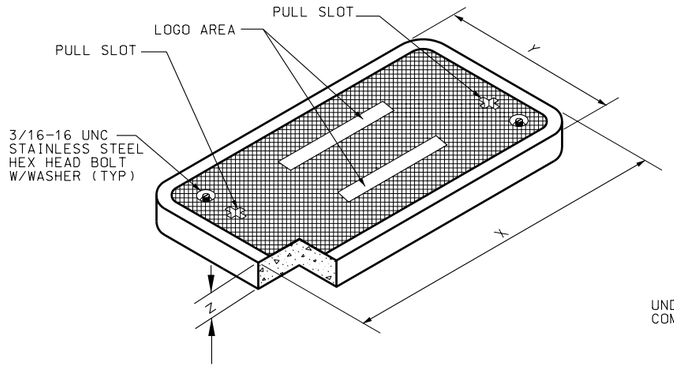
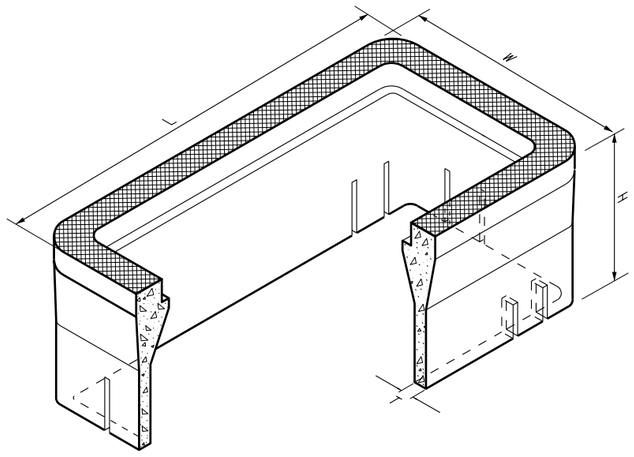
STANDARD ENGINEER

STANDARD DRAWING INDEX SHEET

STANDARD DRAWING TITLE

STD DWG
1-C

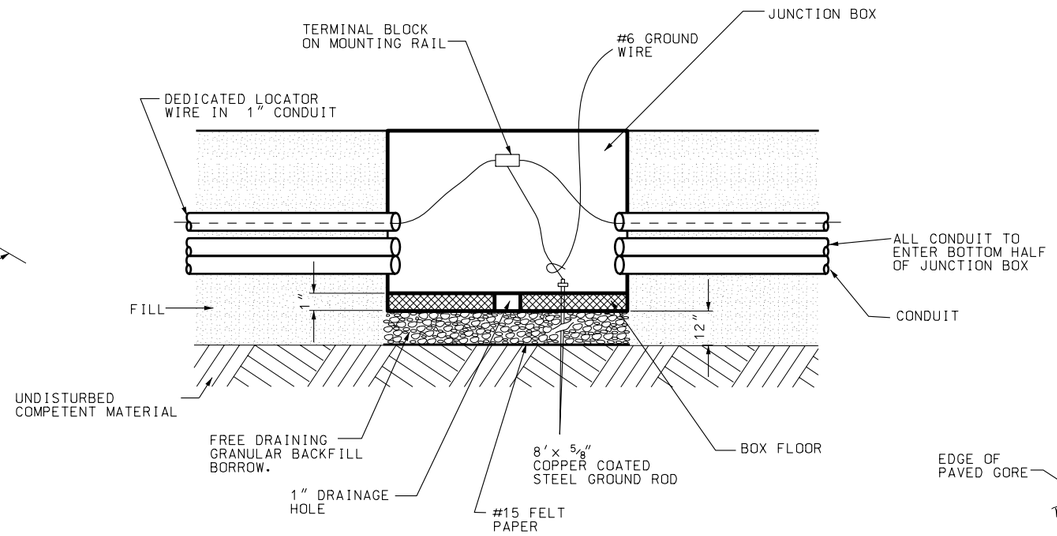




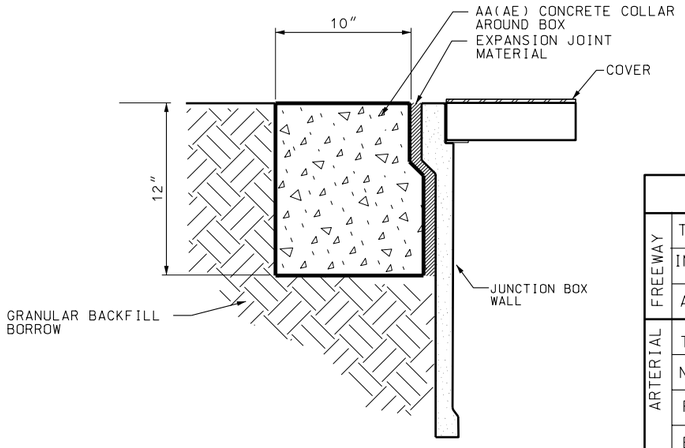
BOX AND LID DIMENSIONS

BOX TYPE	"L" inch	"W" inch	"H" inch	"T" inch	"X" inch	"Y" inch	"Z" inch
I-PC	25	16	24	$1^{1}/_{2}$	$23^{1}/_{4}$	$13^{3}/_{4}$	2
II-PC	$32^{1}/_{4}$	$19^{1}/_{4}$	24	$1^{1}/_{2}$	$30^{1}/_{2}$	$17^{1}/_{2}$	2
III-PC	$49^{5}/_{8}$	$32^{1}/_{8}$	24	2	$47^{5}/_{8}$	$30^{1}/_{8}$	3

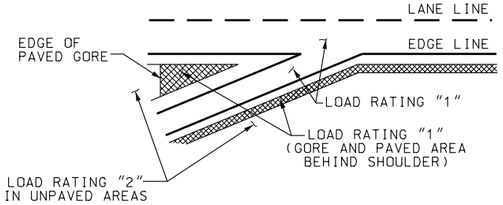
NOTES:
1. SEE STD DWG SL12 FOR PLASTIC TYPE I AND TYPE II JUNCTION BOXES.



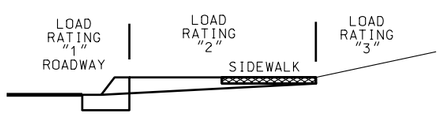
JUNCTION BOX CONDUIT PENETRATION DETAIL



JUNCTION BOX CONCRETE COLLAR DETAIL



FREEWAY APPLICATION



ARTERIAL STREET APPLICATION

TABLE 1. FREEWAY AND ARTERIAL STREET APPLICATIONS

	APPLICATION	LOAD RATING 1	2	3
FREEWAY	TRAVELED-WAY/PAVED SHOULDER	X		
	INCIDENTAL TRAFFIC: PAVED GORE, PAVED AREA BEHIND SHOULDER	X		
	ALL OTHER AREAS		X	
ARTERIAL	TRAVELED-WAY/PAVED SHOULDER	X		
	NON-RAISED MEDIAN, INDUSTRIAL/COMMERCIAL DRIVEWAYS	X		
	PARKWAY/SIDEWALK		X	
	BEHIND SIDEWALK, NOT WHEEL LOADING ACCESSIBLE			X

TABLE 2. JUNCTION BOX LID STATIC VERTICAL LOAD RATING

LOAD RATING	COVER ENCLOSURE	DESIGN LOAD (lb)	TEST LOAD (lb)	TEST AREA (inch)
1	HS20	21000	45000	10 x 20
2	INCIDENTAL TRAFFIC (10K)	10000	22500	10 x 20
3	PLASTIC	8000	12000	10 x 10

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	C.W.	CORRECTED CONDUIT SIZE 3/4" TO 1" IN THE JUNCTION BOX CONDUIT PENETRATION DETAIL

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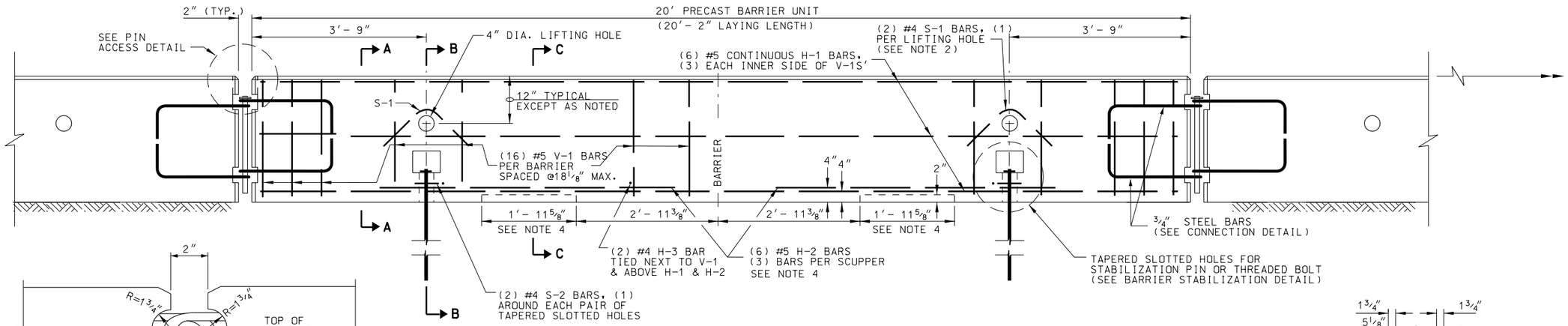
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

POLYMER-CONCRETE JUNCTION BOX DETAILS

STANDARD DRAWING TITLE

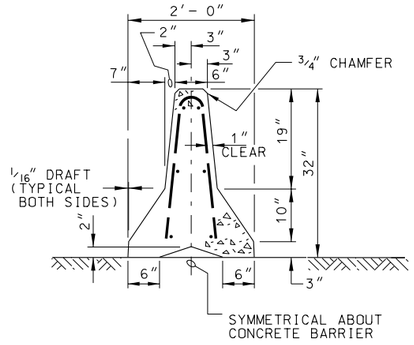
STD DWG
AT 7



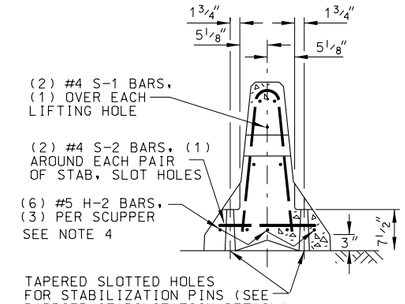
ELEVATION - TYPICAL BARRIER

MASS: 3.9 TONS PER PANEL

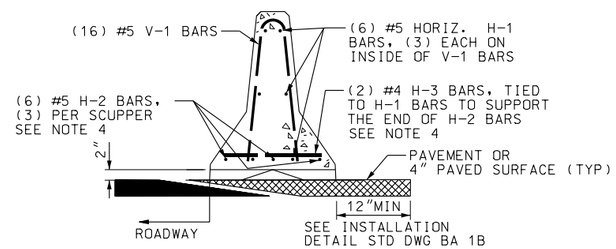
PIN ACCESS DETAIL



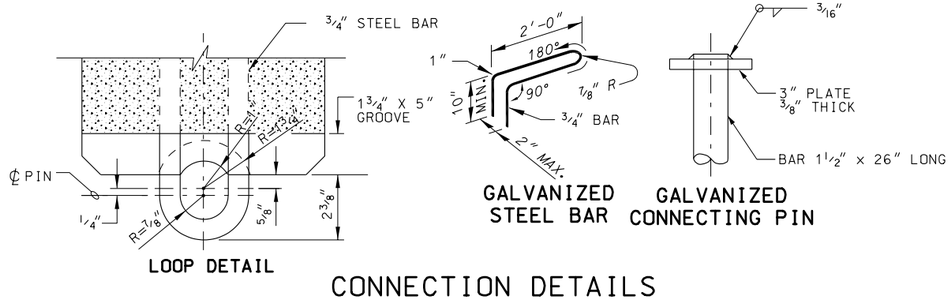
SECTION A-A



SECTION B-B

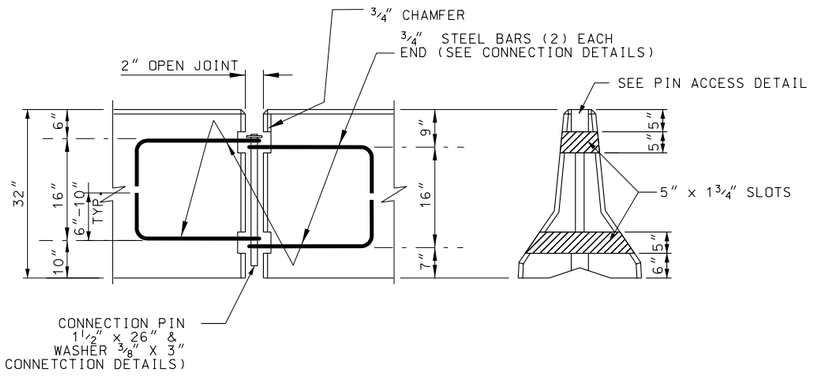


SECTION C-C



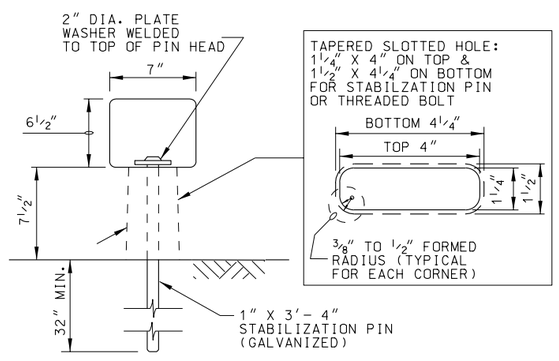
CONNECTION DETAILS

(SEE NOTE 1)



LOOP LOCATION

BARRIER SLOT DETAIL



BARRIER STABILIZATION DETAIL

(SEE NOTE 3 ON STD DWG BA 1B)

NOTES:

1. USE ASTM A 36 STEEL FOR CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS. A ONE PIECE PIN WITH A 3 inch ROUNDED TOP MAY BE USED IN PLACE OF THE DETAILED CONNECTION PIN IF THE ONE PIECE PIN MEETS ASTM A 36 REQUIREMENTS.
2. USE A 4 inch WHITE PVC SLEEVE TO FORM THE LIFTING HOLES. LEAVE SLEEVE IN PLACE AFTER CASTING.
3. PROVIDE A MINIMUM OF 12 inch OF PAVED SURFACE BEHIND BARRIER.
4. PROVIDE BLOCK OUT AND REINFORCING STEEL FOR SCUPPERS WHEN NOTED ON PLANS.
5. PLACE AN ADEQUATE AMOUNT OF SILICONE ADHESIVE ON BOTTOM OF WASHER BEFORE INSERTING PIN TO HOLD IN PLACE AND PREVENT EASY HAND REMOVAL.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/06/02	JL	CORRECTED DIMENSION BOTTOM RIGHT CORNER SECTION B-B

UTAH DEPARTMENT OF TRANSPORTATION
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DEPUTY DIRECTOR

PRECAST CONCRETE FULL BARRIER STANDARD SECTION

STANDARD DRAWING TITLE

STD DWG
BA 1A

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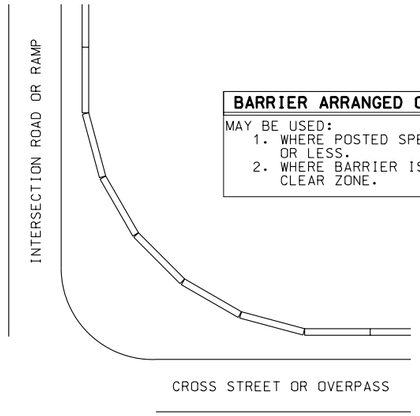
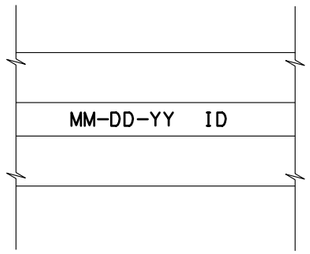
03-MAR-2003



BARRIER ARRANGED ON A CURVE

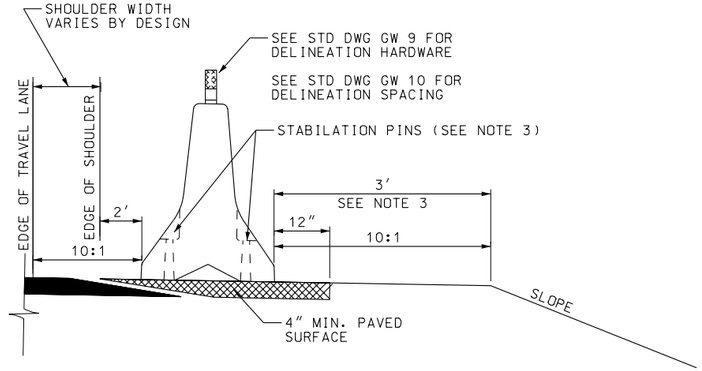
MAY BE USED:
1. WHERE POSTED SPEED IS 35 MPH OR LESS.
2. WHERE BARRIER IS OUTSIDE THE CLEAR ZONE.

CURVED LAYOUT

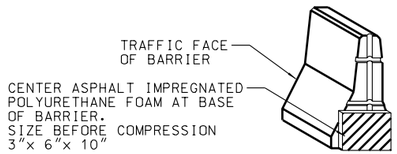


BARRIER MARKINGS

SEE NOTE 6



STANDARD INSTALLATION



BARRIER SEAL

SEE NOTE 8

TABLE OF MAXIMUM TAPERS OUTSIDE SHY LINE

DESIGN SPEED(MPH)	TAPER
70	20:1
60	18:1
55	16:1
50	14:1
45	12:1
40	10:1
35	8:1

TABLE 1

SEE NOTE 1

TABLE OF MAXIMUM TAPERS INSIDE SHY LINE

DESIGN SPEED(MPH)	TAPER
70	30:1
60	26:1
55	24:1
50	21:1
45	18:1
40	16:1
35	13:1

TABLE 2

SEE NOTE 1

METAL REINFORCEMENT TABLE

MARK	LOCATION	BAR SIZE	(NO.BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE SCUPPERS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	HORIZ. IN TOP OF WING WALL & IN FLOOR BACK WALL	#4	(2)	2'-5" LIFTING HOLE 90° 3 3/8"R
S-2	HORIZ. AROUND SLOTS BETWEEN V-I SCUPPERS	#4	(2)	1 1/2"R SLOTS 5'-1" BAR W/(4) 1 1/2"R BENDS & MIN. 1'-0" OVERLAP 7" 1'-6" 1" MIN. CLEAR TO BAR
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH SCUPPER	#5	(16)	TOTAL LENGTH 4'-9" 2 3/16"R 12° 9 1/2" 4 3/8" 2'-1 3/8"

NOTES:

1. USE APPROPRIATE TAPER RATE FOR BARRIER PLACEMENT FROM TABLE 1 OR TABLE 2.
2. PIN ALL BARRIER SECTION TOGETHER AT CONNECTION LOOPS.
3. THE CONCRETE BARRIER "STANDARD INSTALLATION" DESIGN ALLOWS FOR 3 feet OF OUTWARD LATERAL MOVEMENT IF THE BARRIER IS STRUCK. USE STABILIZATOR PINS WHEN BARRIER PLACEMENT REQUIREMENTS DO NOT ALLOW FOR 3 feet OUTWARD LATERAL MOVEMENT.
4. USE ASTM A 36 STEEL FOR CONNECTION PIN, CONNECTION LOOPS, AND STABILIZATION PINS.USE A ONE PIECE PIN WITH A 3 inch ROUNDED TOP PLACE OF THE CONNECTION PIN THE ONE PIECE PIN MEETS ASTM A 36 REQUIREMENTS.
5. USE A 4 inch WHITE PVC SLEEVE TO FORM THE LIFTING HOLES. LEAVE SLEEVE IN PLACE AFTER CASTING.
6. MARK EACH BARRIER WITH 1 1/2 inch NUMBERS INDICATING THE DATE OF CASTING AND IDENTIFICATION NUMBER SUPPLIED BY THE INSPECTOR, IMPRESSED 1/4 inch DEEP INTO THE TOP CENTER OF THE BARRIER.
7. USE COATED REINFORCING STEEL EXCEPT AS NOTED.
8. DO NOT USE BARRIER SEAL WHEN SCUPPERS ARE PRESENT ON BARRIER.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	G.S.	CHANGE DIMENSIONS OF NUMBERS TO 1½" IN NOTE 6

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DEPUTY DIRECTOR

PRECAST CONCRETE FULL BARRIER STANDARD SECTION

STANDARD DRAWING TITLE

STD DWG
BA 1B

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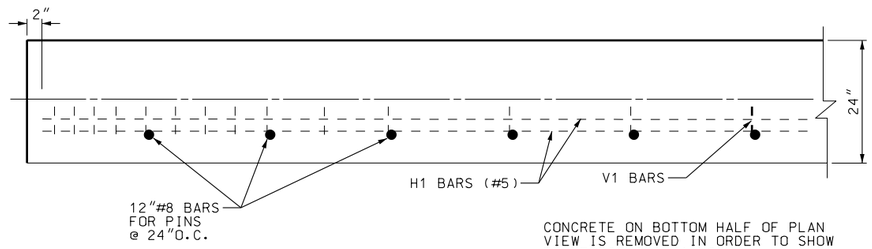
27-FEB-2003

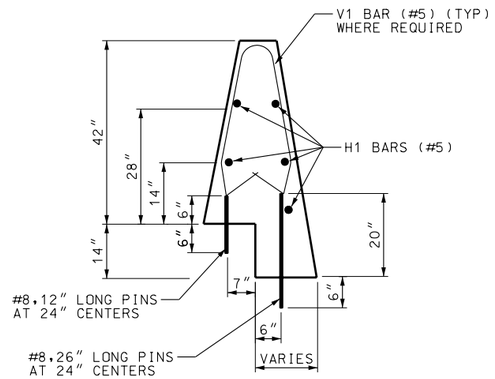
REINFORCING DETAILS



CONCRETE ON BOTTOM HALF OF PLAN VIEW IS REMOVED IN ORDER TO SHOW REINFORCING DETAILS.

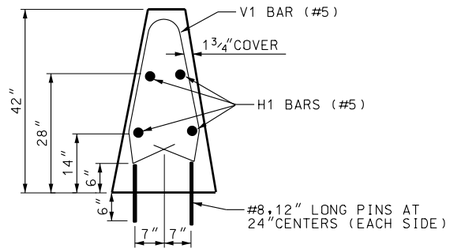
PLAN VIEW

(SYMMETRICAL ABOUT CENTER LINE)

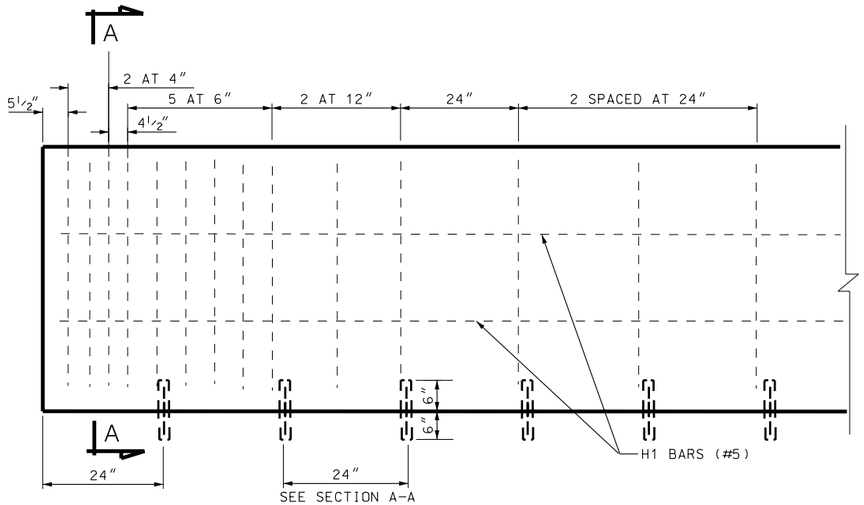


SECTION A-A

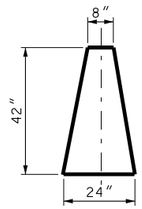
(STEPPED PAVEMENT)



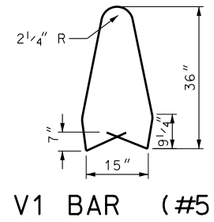
SECTION A-A



ELEVATION



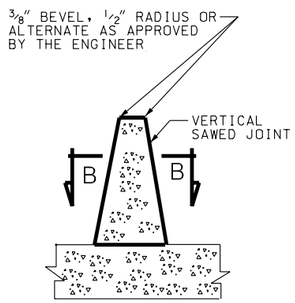
TYPICAL SECTION



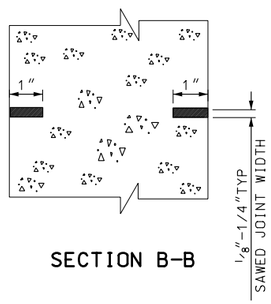
V1 BAR (#5)

DELINEATION HARDWARE AND SPACING

SEE NOTE 8



SECTION THROUGH SAWED JOINT



SECTION B-B

NOTES:

1. METHODS DEVISED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER ASSURING THE LONGITUDINAL ROADWAY STEEL IS POSITIONED, +/- 1/2 inch AS DIMENSIONED IS SATISFACTORY.
2. THE CONTRACTOR CAN SLIP FORM THE BARRIER, IN WHICH CASE TYING ADDITIONAL REINFORCEMENT TO THE UPPER TWO THIRDS OF THE REINFORCING CAGE PROVIDES BRACING.
3. DO NOT USE BARRIER TO SUPPORT HIGHWAY LIGHTING POLES.
4. DO NOT USE BARRIER FOR BRIDGE ROADWAY APPLICATIONS.
5. SAW JOINTS AT PAVEMENT TRANSVERSE JOINTS.
6. USE COATED DEFORMED BILLET-STEEL BARS CONFORMING TO AASHTO M 284, OR M 111 AND M 31M GRADE 400.
7. USE CLASS AA(AE) CONCRETE UNLESS WHERE SPECIFIED OTHERWISE.
8. SEE STD DWG GW 9 FOR DELINEATION HARDWARE AND STD DWG GW 10 FOR DELINEATION SPACING.

REVISIONS			
NO.	DATE	APPR.	REMARKS
1	08/08/02	T.J.	ADDED "UNLESS" TO NOTE 7

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19.2002 DATE

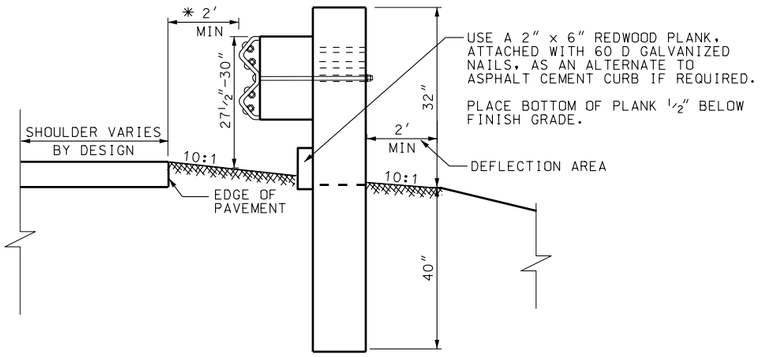
CHAIRMAN STANDARDS COMMITTEE
APPROVED — DEC.19.2002 DATE

DEPUTY DIRECTOR

CAST IN PLACE CONSTANT SLOPE BARRIER

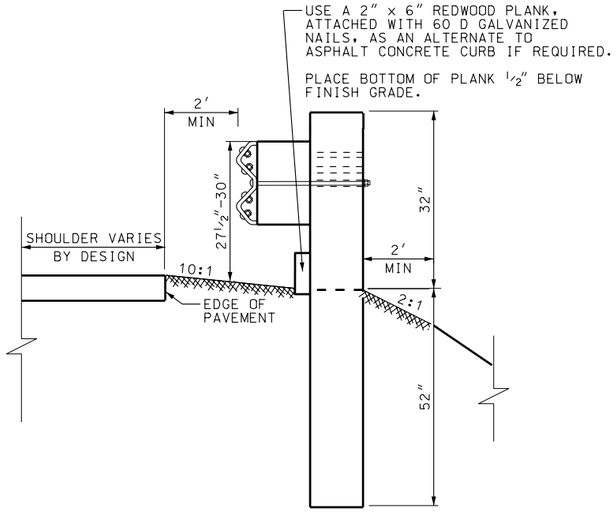
STANDARD DRAWING TITLE

STD DWG
BA 3



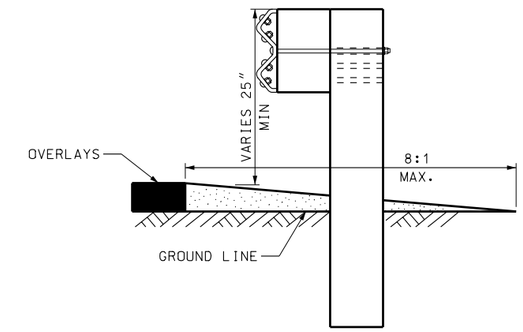
INITIAL INSTALLATION
USE 72inch LONG POSTS

* NOTE.
2' MINIMUM OR PLACE AS FAR OFF PAVEMENT EDGE AS PRACTICAL.



INITIAL LONG POST INSTALLATION
USE 84inch LONG POSTS

NOTE:
USE THIS INSTALLATION WHEN THE MINIMUM 2 FOOT DEFLECTION AREA BEHIND RAIL CANNOT BE PROVIDED.



RAIL ELEMENT RAISED

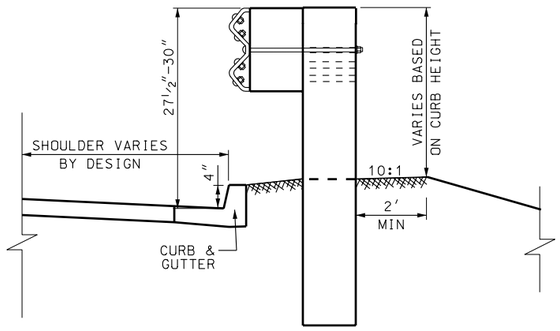
NOTES:
RAISE RAIL ELEMENT WHEN OVERLAY IS REQUIRED.

RAISED RAIL ELEMENT WILL ACCOMMODATE 6 TO 8 INCHES OF OVERLAY MATERIAL.

SLOPE OF SHOULDER INTO FACE OF RAIL NOT TO EXCEED 8:1.

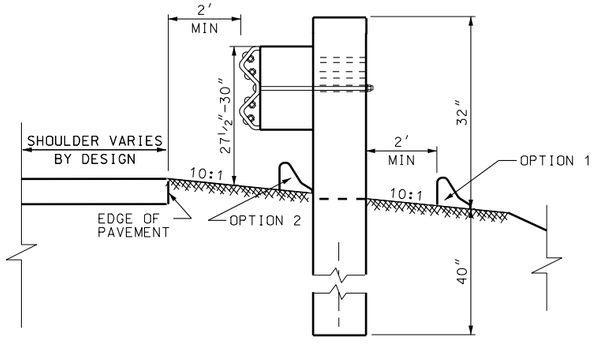
RAISE REDWOOD PLANKING WHEN REQUIRED.

RAISING THE RAIL ELEMENT TO MAXIMUM HEIGHT REQUIRED BEFORE THE MINIMUM HEIGHT OF THE RAIL ELEMENT ABOVE GROUND LEVEL CAN BE REDUCED TO THE MINIMUM OF 25 INCHES.



INSTALLATION W/CURB & GUTTER
USE 72 inch LONG POSTS

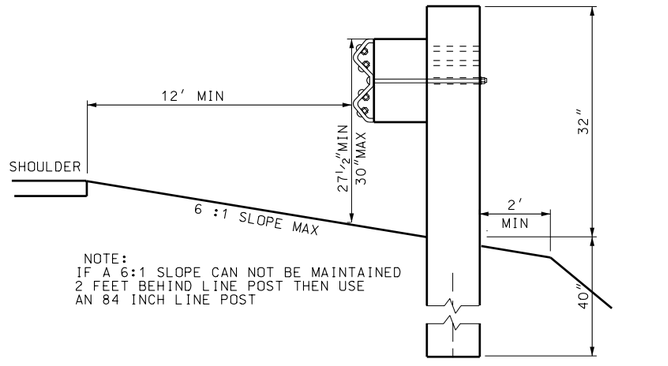
NOTE:
USE A MAXIMUM 4" CURB HEIGHT.
PLACE TOP FACE OF CURB EVEN WITH FACE OF RAIL ELEMENT



INSTALLATION W/ASPHALT CONCRETE CURB
USE 72inch LONG POSTS

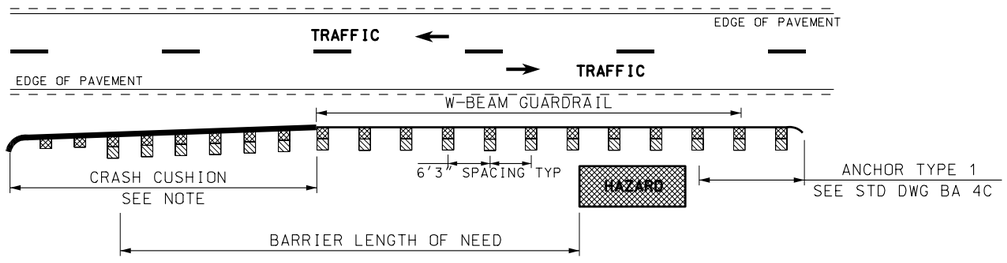
OPTION 1: PREFERED INSTALLATION.

OPTION 2: PLACE FACE OF ASPHALT CONCRETE CURB EVEN WITH FACE OF RAIL OR BEHIND FACE OF RAIL.



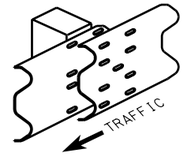
NOTE:
IF A 6:1 SLOPE CAN NOT BE MAINTAINED 2 FEET BEHIND LINE POST THEN USE AN 84 INCH LINE POST

OFFSET BARRIER INSTALLATION

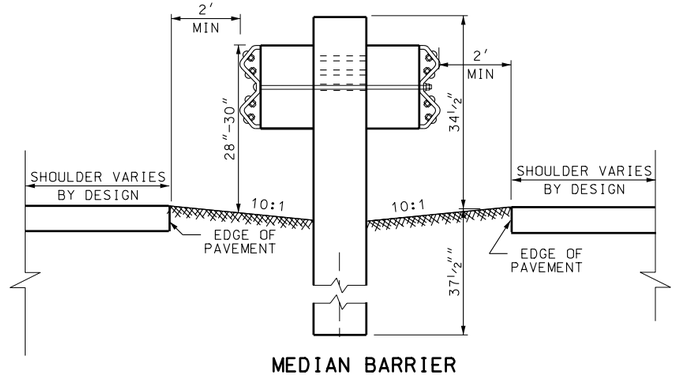


TYPICAL INSTALLATION

NOTE.
CRASH CUSHION REQUIRED WHEN BARRIER END IS WITHIN 1.2 TIMES AASHTO ROADSIDE DESIGN GUIDE CLEAR ZONE.



SPLICE LAP DETAIL



MEDIAN BARRIER

NOTES:
RAISE BOTH RAIL ELEMENTS AS PER RAISE ELEMENT DETAIL WHEN REQUIRED.

ATTACH REQUIRED DELINEATION ON THE POST.

NO.	DATE	APPR.	REMARKS
1	11/14/02	G.S.	REVISED RAIL HEIGHT, ADDED DETAIL "OFFSET BARRIER INSTALLATION" AND CHANGED TYPICAL INSTALLATION DETAIL

REVISIONS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

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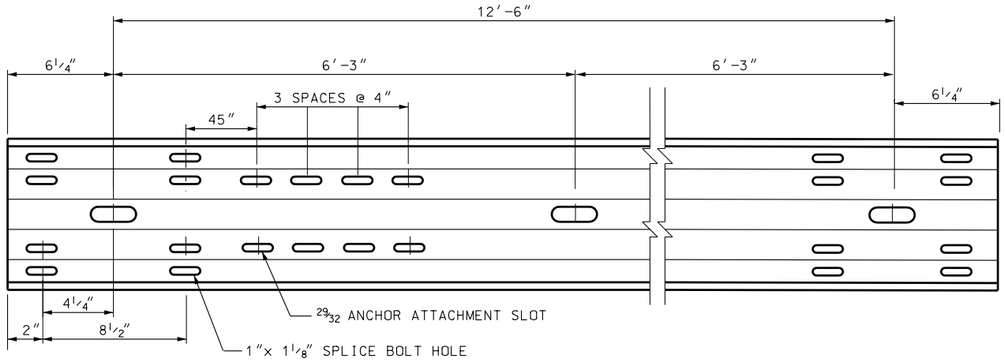
DEPUTY DIRECTOR

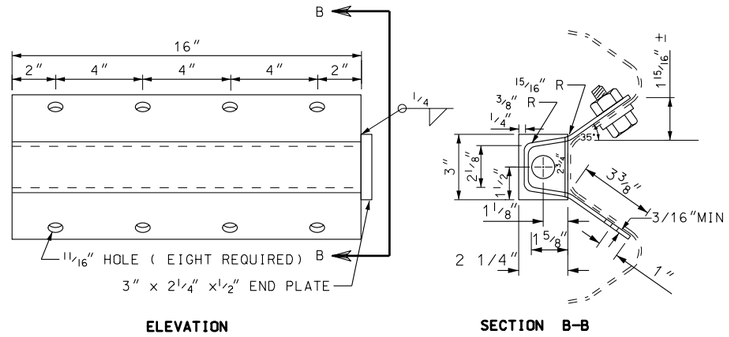
BEAM GUARDRAIL INSTALLATIONS

STANDARD DRAWING TITLE

STD DWG
BA 4B

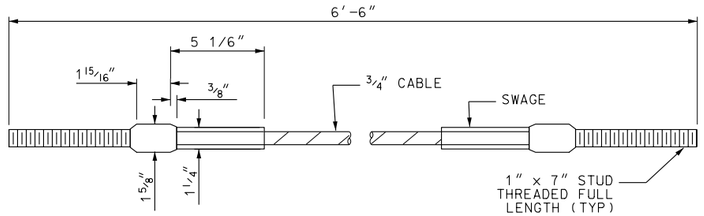


RAIL ELEMENT

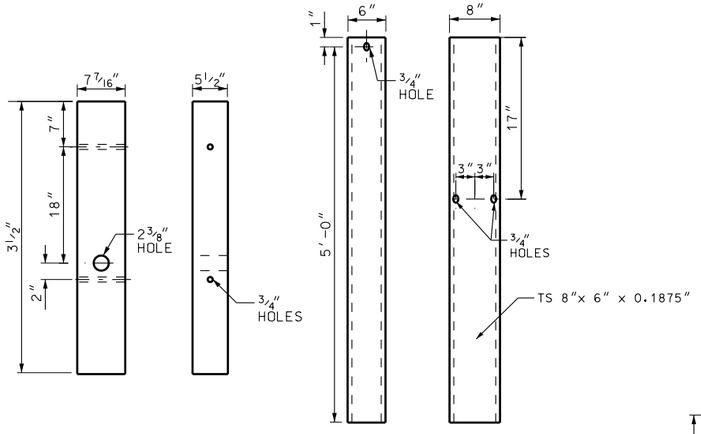


ELEVATION SECTION B-B

ANCHOR PLATE



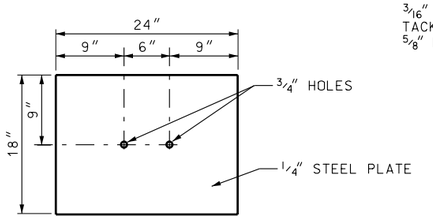
ANCHOR CABLE



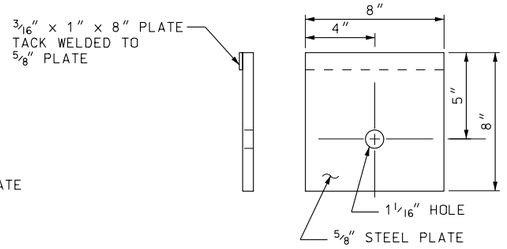
W-BEAM

WOOD BREAKAWAY POST

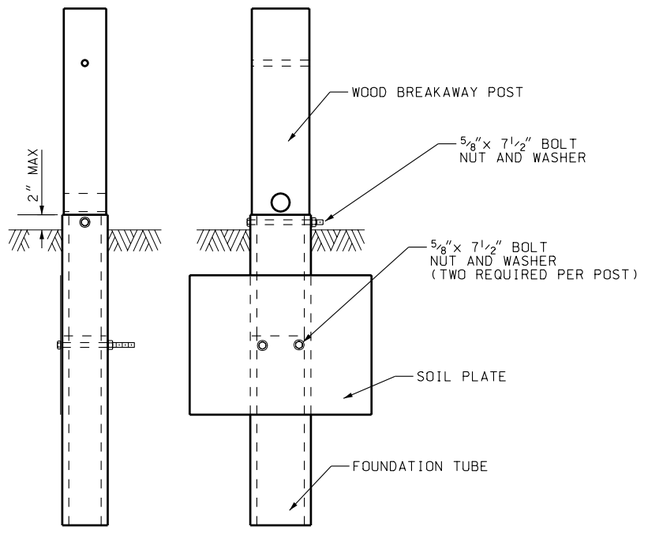
FOUNDATION TUBE



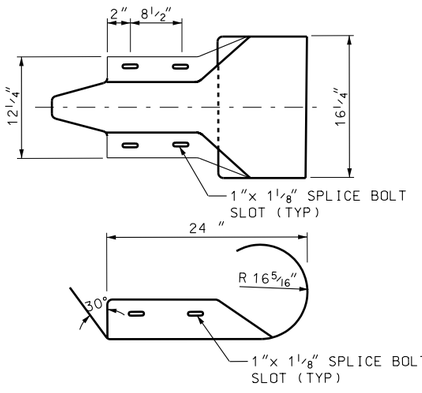
SOIL PLATE



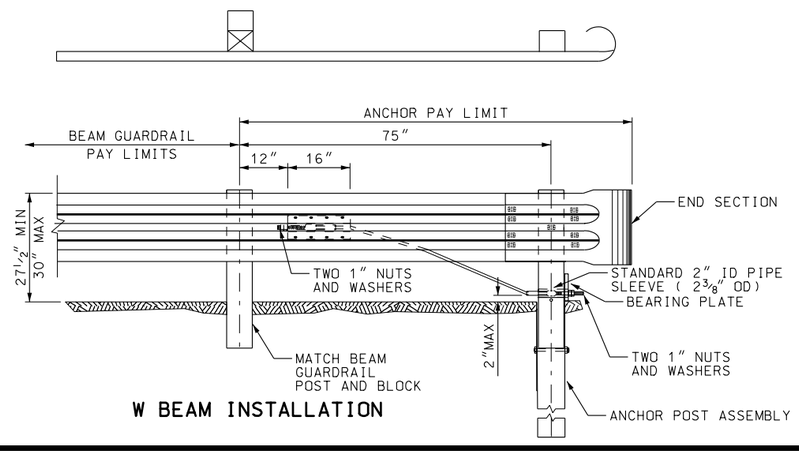
BEARING PLATE



ANCHOR POST ASSEMBLY



END SECTION (ROUNDED)



W BEAM INSTALLATION

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

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DEPUTY DIRECTOR

BEAM GUARDRAIL ANCHOR TYPE 1

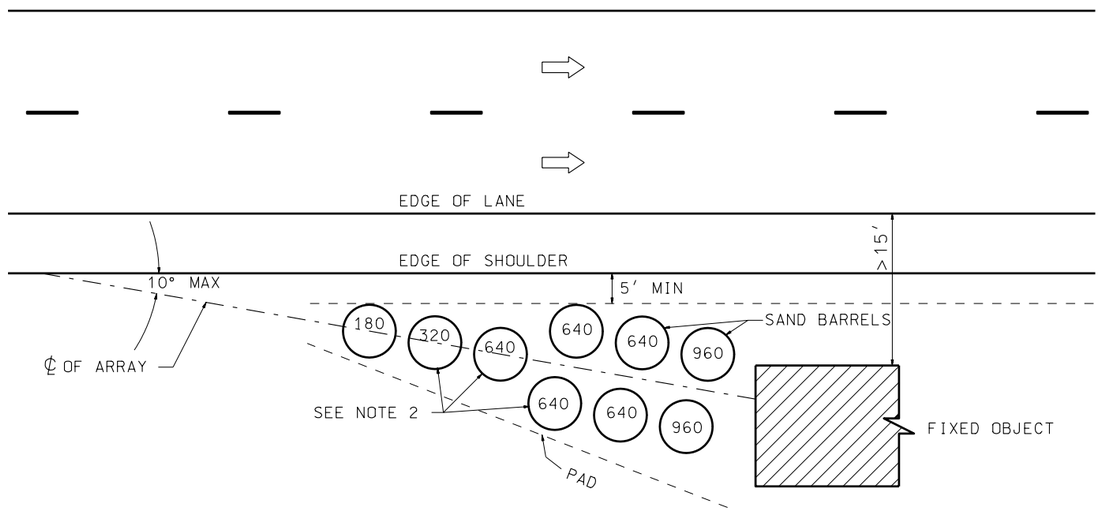
STANDARD DRAWING TITLE

STD DWG

BA 4C

DGN FileNtEast\Standard Drawings\Imperial\Approved\Changed\Approved\BA04C.dgn

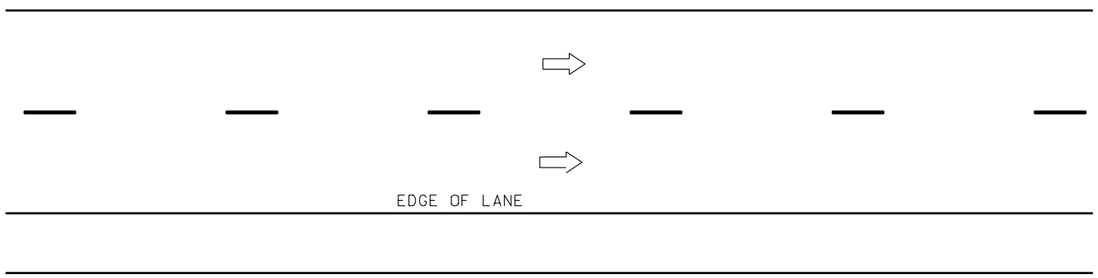
27-FEB-2003

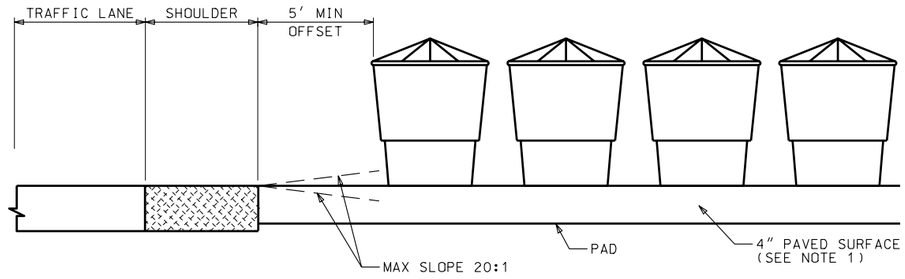


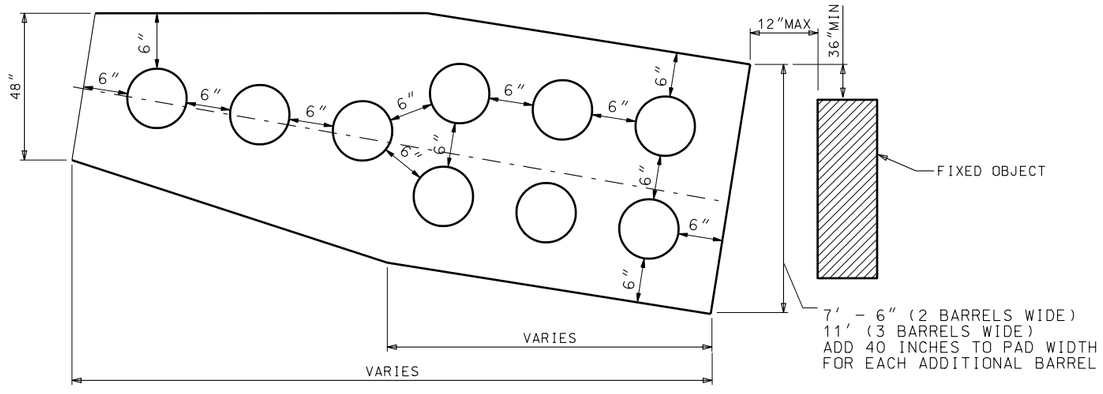
FOR ILLUSTRATION ONLY
ACTUAL DESIGNS WILL BE SITE SPECIFIC
SEE NOTE 3

NOTES:

1. PAVE PAD WITH HOT MIX ASPHALT OR PORTLAND CEMENT CONCRETE.
2. MARK BARREL POSITION AND THE REQUIRED SAND WEIGHT FOR EACH BARREL POSITION ON THE PAVED SURFACE. USE FLUORESCENT ORANGE FOR THIS MARKING.
3. USE ENERGITE III SYSTEMS MANUAL TO GET REQUIRED DESIGN CRITERIA. MANUAL AVAILABLE FROM THE DIVISION OF TRAFFIC AND SAFETY.
4. INSTALL REQUIRED MARKING AS PER STD DWG CC 1







REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	G.S.	REORIENTED BOTTOM LEFT DETAILED AND ADDED
			DIMENSION TO UPPER RIGHT CORNER OF DETAIL.

UTAH DEPARTMENT OF TRANSPORTATION
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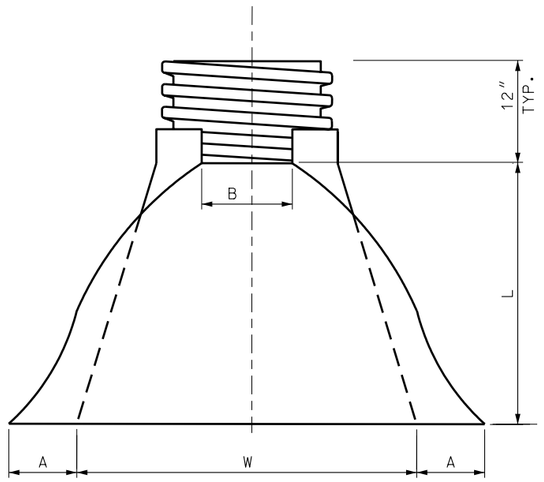
DEPUTY DIRECTOR

CRASH CUSHION TYPE E SAND BARREL DETAILS

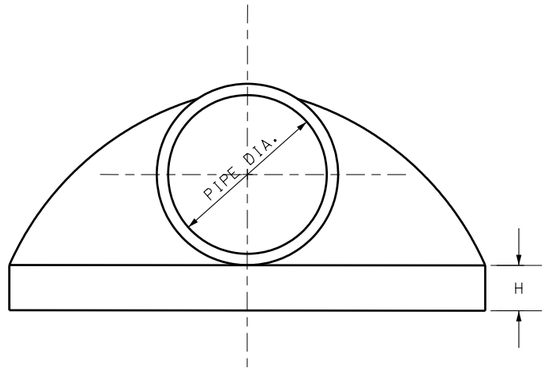
STANDARD DRAWING TITLE

STD DWG
CC 6

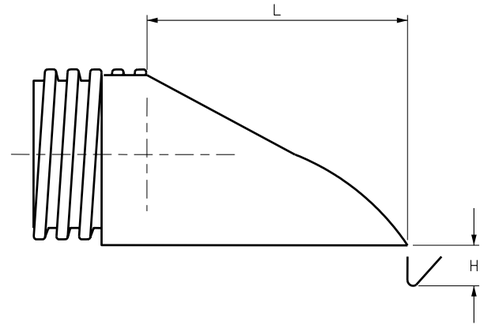
HIGH DENSITY POLYETHYLENE END SECTION (HDPE)



TOP VIEW



END VIEW



SIDE VIEW

TABLE 1: HDPE AND PVC PIPES END SECTIONS

PIPE DIAMETER inch	DIMENSIONS IN INCHES				
	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
18	7.5	15	6.5	32	35
24	7.5	18	6.5	36	45
30	10.5	N/A	7.0	53	68
36	10.5	N/A	7.0	53	68

TABLE 2: MAXIMUM FILL HEIGHT (SEE NOTE NO. 3)

PIPE SIZE DIA. inch	PIPE TYPE							
	HIGH DENSITY POLYETHYLENE RIBBED SMOOTH LINED (HDPE)	SMOOTH WALL (SOLID) WALL THICKNESS inches					POLYVINYL CHLORIDE (PVC)	CORRUGATED POLYETHYLENE (HDPE) (AASHTO M 294)
		0.6	0.85	0.92	1.15	1.38		
	MAX.FILL HEIGHT ft.							
12								30
15								30
18	24		46				24	30
24	24			34			25	30
30	24				34		23	30
36	24					34	22	30
42								
48								

NOTES:

1. IN ORDER TO ASSURE PROPER FIT WITH 30" AND 36" END SECTIONS ARE ATTACHED BY WELDING TO A SHORT STUB OF 30" OR 36" PIPE AND REQUIRE A STANDARD CONNECTING BAND TO MAKE THE ATTACHMENT.

2. DO NOT USE CULVERT END SECTIONS WITHIN THE CLEAR ZONE.

3. MAXIMUM FILL HEIGHT MEASURED FROM TOP OF PIPE TO TOP OF PAVEMENT SURFACE AT HIGHEST FILL SECTION.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/26/02	M.F	CORRECT SPELLING. MADE EDITORIAL CHANGES TO NOTES 1.2 AND TABLE 2.

UTAH DEPARTMENT OF TRANSPORTATION
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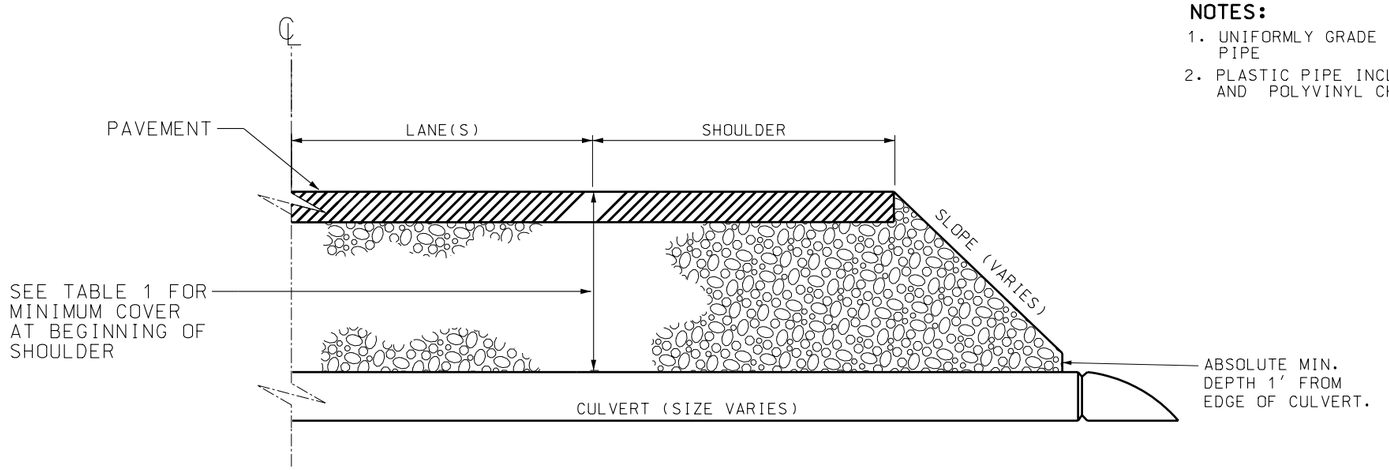
DEPUTY DIRECTOR

MAXIMUM FILL HEIGHT AND END SECTIONS FOR HDPE AND PVC PIPES

STANDARD DRAWING TITLE

STD DWG
DG 3

PIPE CULVERT MINIMUM COVER



NOTES:

1. UNIFORMLY GRADE THE GROUND AROUND PIPE
2. PLASTIC PIPE INCLUDES POLYETHYLENE AND POLYVINYL CHLORIDE,

TABLE 1: PIPE CULVERTS MINIMUM COVER

SURFACE TYPE	CORRUGATED METAL PIPES AND PIPE ARCHES	STRUCTURAL PLATE PIPES AND PIPE ARCHES	REINFORCED CONCRETE PIPES	PLASTIC PIPES (SEE NOTE 2)
FLEXIBLE PAVEMENTS OR UNPAVED	1/5 (DIA. OR SPAN) OR 2' MIN.	1/8 (DIA. OR SPAN) OR 2' MIN.	2' MIN.	2' MIN.
RIGID PAVEMENTS	1/5 (DIA. OR SPAN) OR 1'6" MIN.	1/8 (DIA. OR SPAN) OR 1'6" MIN.	1'6" MIN.	2' MIN.

NOTE: DRAWING NOT TO SCALE

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/28/02	M.F.	CORRECT ARROW IN PIPE CULVERT MINIMUM COVER DETAIL.

UTAH DEPARTMENT OF TRANSPORTATION
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DEPUTY DIRECTOR

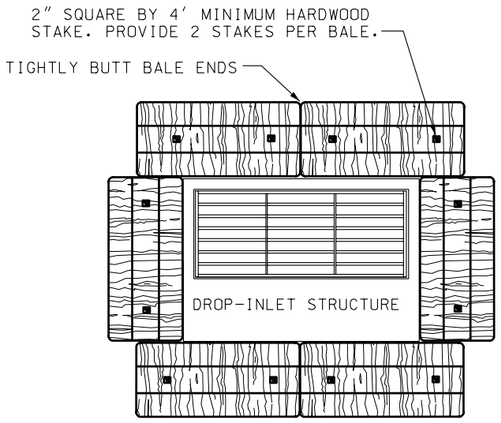
PIPE CULVERTS MINIMUM COVER

STANDARD DRAWING TITLE

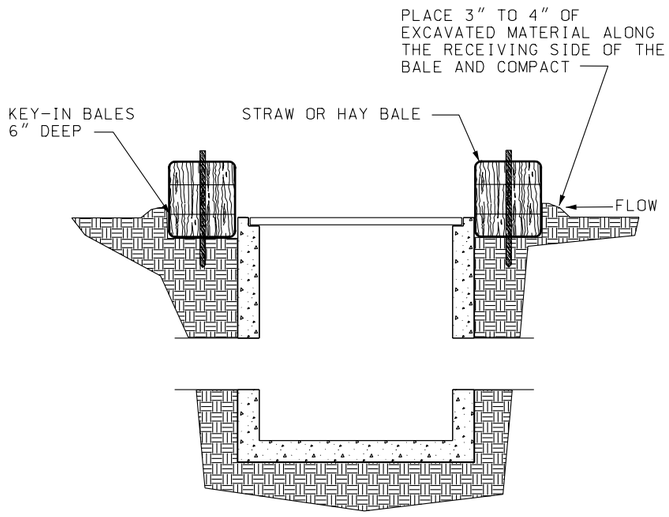
STD DWG
DG 4

DROP-INLET BARRIERS

STRAW AND HAY BALE DROP-INLET BARRIER



PLAN VIEW

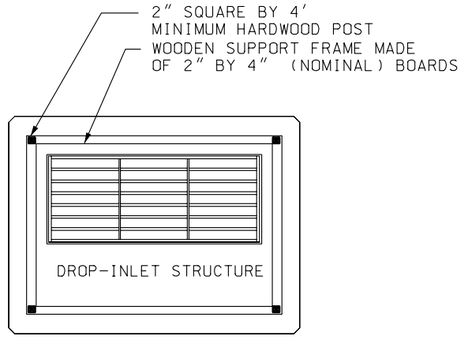


SECTION

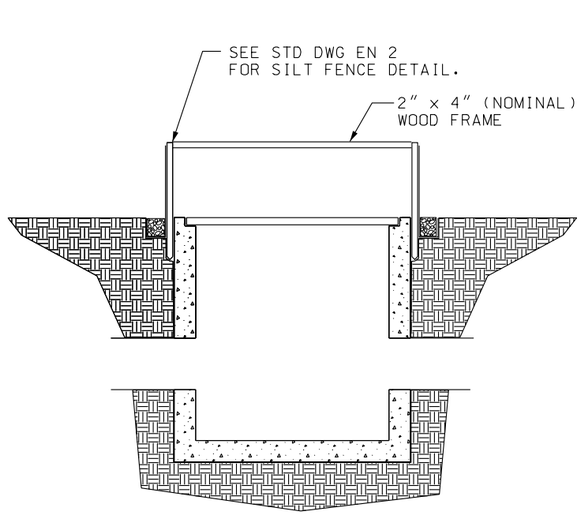
NOTES:

1. KEY-IN BALES IN AN EXCAVATED TRENCH AROUND THE PERIMETER OF THE DROP INLET STRUCTURE THAT IS 6" DEEP BY A BALES WIDTH WIDE.
2. OVERLAP ON CORNERS MUST BE AT LEAST HALF A BALE WIDE.
3. DEPENDING ON THE SIZE OF THE INLET STRUCTURE, MORE BALES THAN SHOWN MAY BE REQUIRED.
4. IN MEDIAN AREAS, CONSTRUCT SO THAT THE TOPS OF THE BALES ARE NOT HIGHER THAN THE ADJACENT ROADWAY.
5. MAINTAIN A PROPERLY FUNCTIONING SEDIMENT BARRIER THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS CONTRIBUTING TO THE INLET HAVE BEEN PAVED OR VEGETATED.
6. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

SILT FENCE DROP-INLET BARRIER



PLAN VIEW

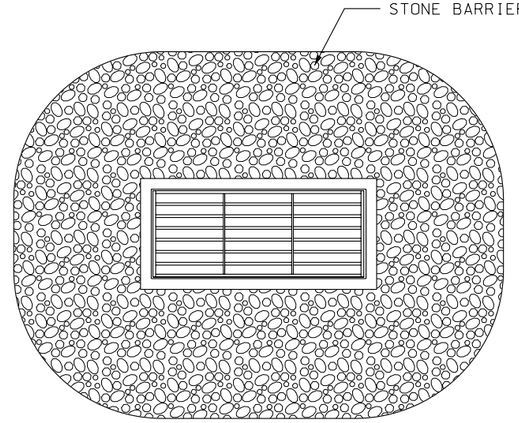


SECTION

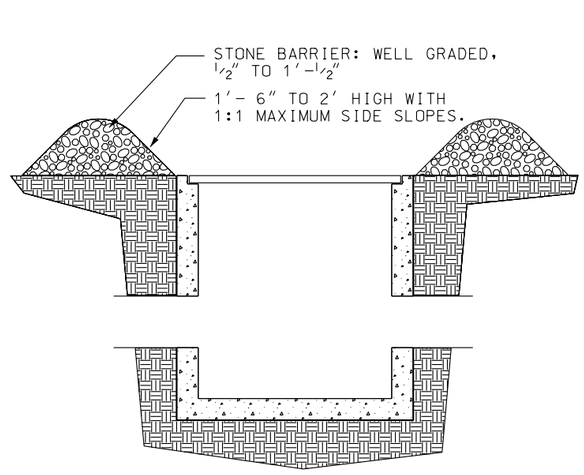
NOTES:

1. EXCAVATE A TRENCH AROUND THE CORNER THE PERIMETER OF THE DROP-INLET THAT IS 6" DEEP AND 4" WIDE.
2. DRIVE POSTS AT EACH CORNER OF THE INLET STRUCTURE. IF THE DISTANCE BETWEEN CORNER POSTS EXCEEDS 4', PLACE ANOTHER POST(S) BETWEEN THEM.
3. CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN SUPPORT FRAME MADE OF 2" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING.
4. IN MEDIAN AREAS, CONSTRUCT SO THAT THE TOP OF THE SILT FENCE IS NOT HIGHER THAN THE ADJACENT ROADWAY.
5. MAINTAIN A PROPERLY FUNCTIONING SILT FENCE BARRIER THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS CONTRIBUTING TO THE INLET HAVE BEEN PAVED OR VEGETATED.
6. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

STONE DROP-INLET BARRIER



PLAN VIEW



SECTION

NOTES:

1. PLACE STONE BARRIER AS SHOWN AROUND THE INLET OPENING.
2. IN MEDIAN AREAS, CONSTRUCT SO THAT THE TOP OF THE STONE BARRIER IS NOT HIGHER THAN THE ADJACENT ROADWAY.
3. MAINTAIN A PROPERLY FUNCTIONING STONE BARRIER THROUGHOUT CONSTRUCTION OR UNTIL DISTURBED AREAS CONTRIBUTING TO THE INLET HAVE BEEN PAVED OR VEGETATED.
4. REMOVE SEDIMENT AS IT ACCUMULATES AND PLACE IT IN A STABLE AREA APPROVED BY THE ENGINEER.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/08/02	F.W.	SILT FENCE DROP INLET BARRIER "SECTION" DETAIL CORRECTED STD DWG CALLOUT

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

CHAIRMAN STANDARDS COMMITTEE
APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

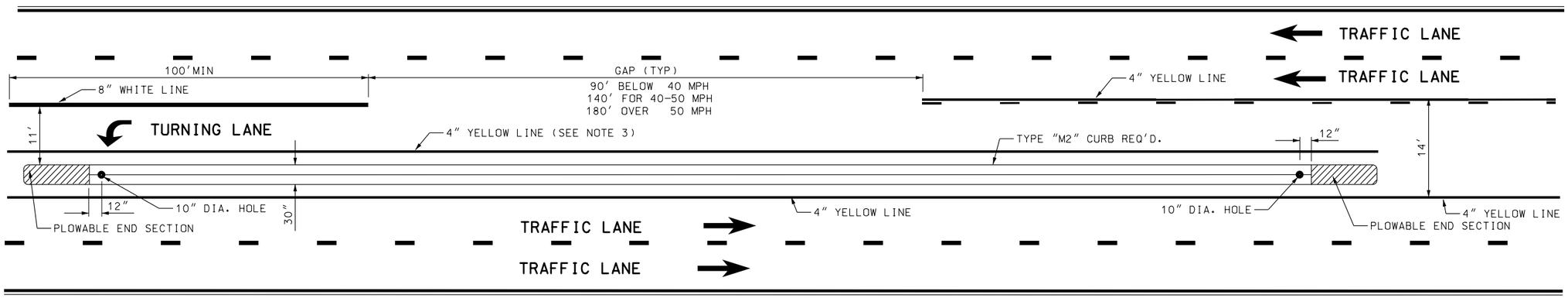
STANDARD DRAWING TITLE

TEMPORARY EROSION CONTROL (DROP-INLET BARRIERS)

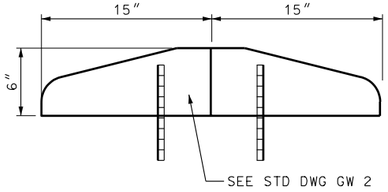
STD DWG

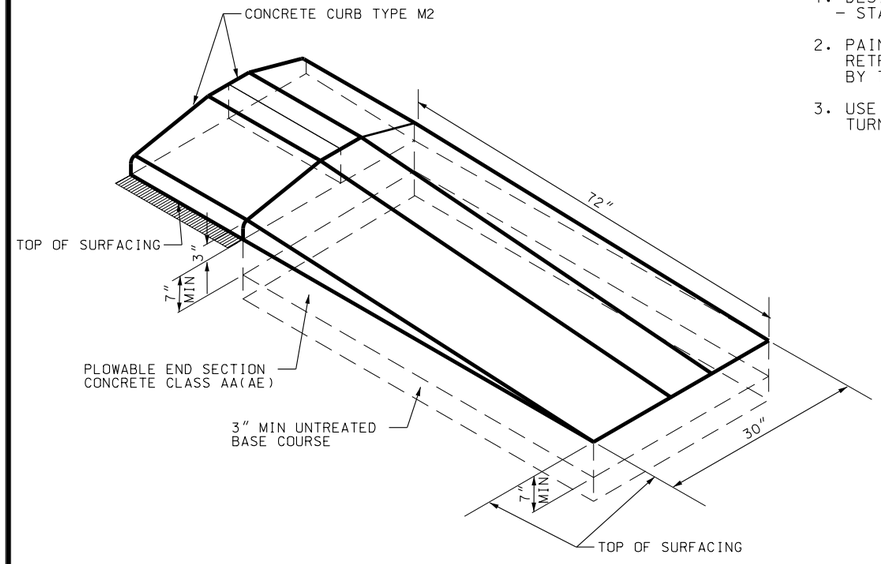
EN 4

MEDIAN WITH RAISED ISLAND



RAISED ISLAND DETAIL
TYPE "M2" CURB

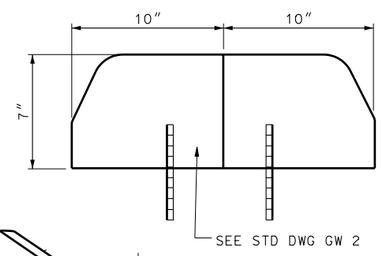


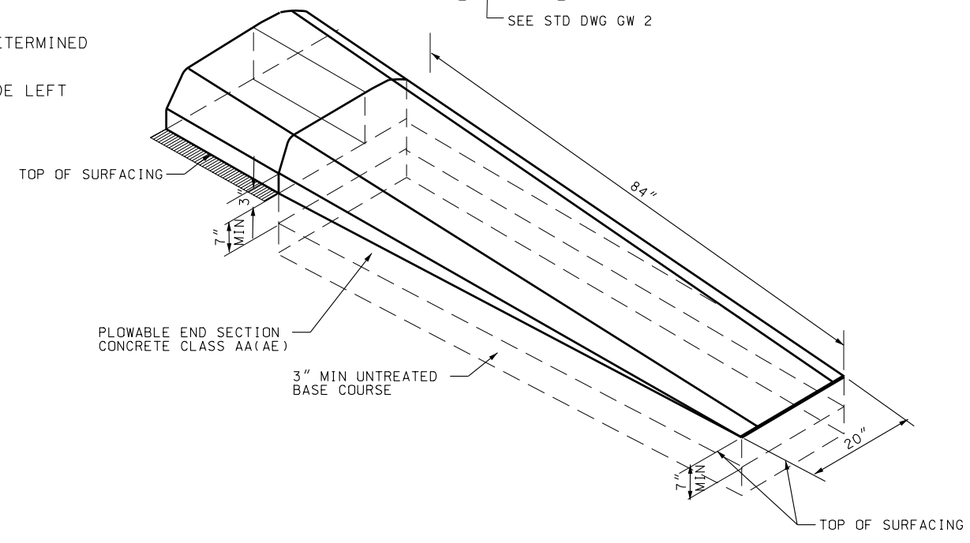


NOTES:

1. DESIGN TO SHOW CONTROL POINTS – STATION & OFFSET.
2. PAINT ISLAND CURBS WITH RETROREFLECTIVE PAINT AS DETERMINED BY THE DIRECTION OF TRAVEL.
3. USE OF 4" YELLOW LINE INSIDE LEFT TURN LANE OPTIONAL.

RAISED ISLAND DETAIL
TYPE "B5" CURB





PLOWABLE END SECTION DETAILS

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/08/02	F.W.	CORRECT NOTE 2

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

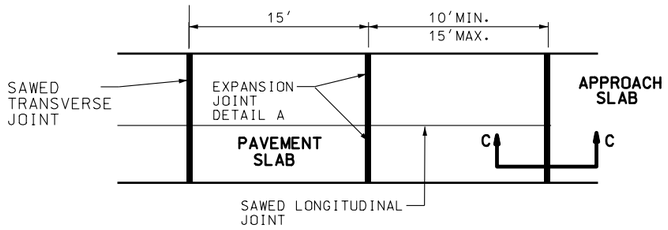
DEPUTY DIRECTOR

RAISED MEDIAN AND PLOWABLE END SECTION

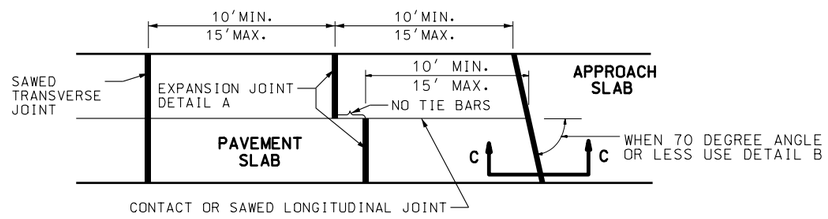
STANDARD DRAWING TITLE

STD DWG
GW 1

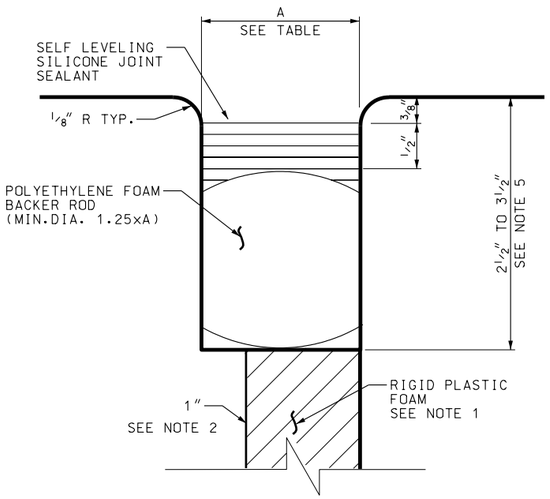
PAVEMENT / APPROACH SLAB DETAILS



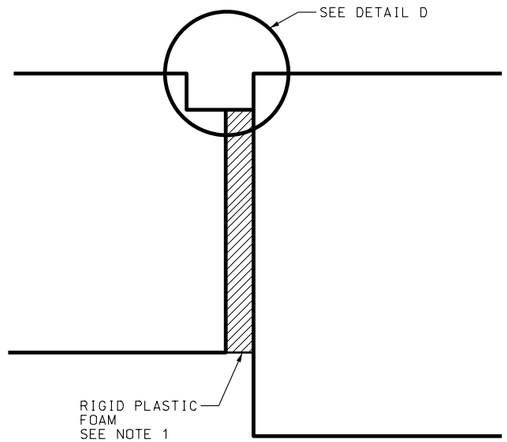
NORMAL APPROACH SLAB



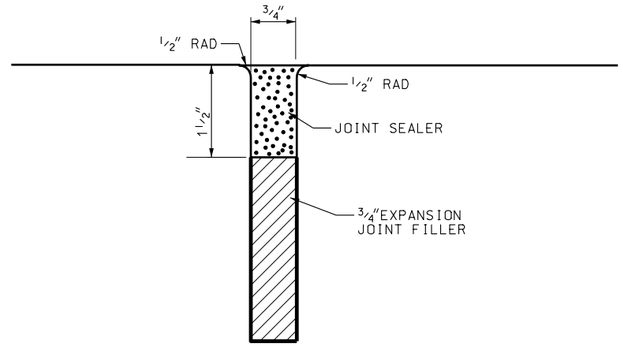
SKEWED APPROACH SLAB



DETAIL "D"



SECTION C-C



DETAIL "A"
(EXPANSION JTS.)

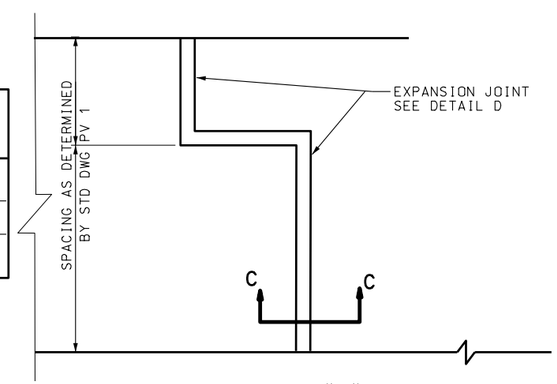
NOTES:

1. USE CLOSED CELL,RIGID PLASTIC FOAM. CUT RIGID PLASTIC FOAM TO CONFORM TO THE CROSS SECTION OF THE PAVEMENT AND FURNISH IN STRIPS EQUAL TO THE WIDTH OF THE PAVEMENT SLAB. MAKE THE TOP SURFACE SMOOTH. PROVIDE A SNUG FIT WITHOUT LOSS IN THICKNESS OF THE MATERIAL.
2. FOR BRIDGES GREATER THAN 250 feet LENGTH, USE 1 1/2" FOR TEMPERATURES LESS THAN 50°F. AT TIME OF ROADWAY PAVING.
3. DO NOT INSTALL JOINT SEALANT ABOVE 90°F. OR BELOW 50°F.
4. FOR STEPPED END APPROACH SLABS, APPLY DETAIL D ALONG LONGITUDINAL EDGES OF STEP. HOWEVER, DO NOT PLACE DOWELS ALONG LONGITUDINAL EDGES.
5. DEPTH TO BE DETERMINED BY CONTRACTOR BASE ON ACTUAL COMPRESSED BACKER ROD HEIGHT.

APPROACH SLAB JOINT WIDTH (inch)

TEMPERATURE (DEG F)	DIMENSION A (FOR BRIDGES GREATER THAN 250' LENGHT)	DIMENSION A (FOR ALL OTHER BRIDGES)
90	1 1/4	1 1/4
60	1 3/4	1 1/2
35	2	1 3/4

SEE NOTE 3



DETAIL "B"
TYPICAL EACH SLAB

REVISIONS

NO.	DATE	APPR.	REMARKS
1	09/25/02	B.W.	DELETED NOTES 1 & 3 REVISED NOTE 1 AND CORRECTED TABLE.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

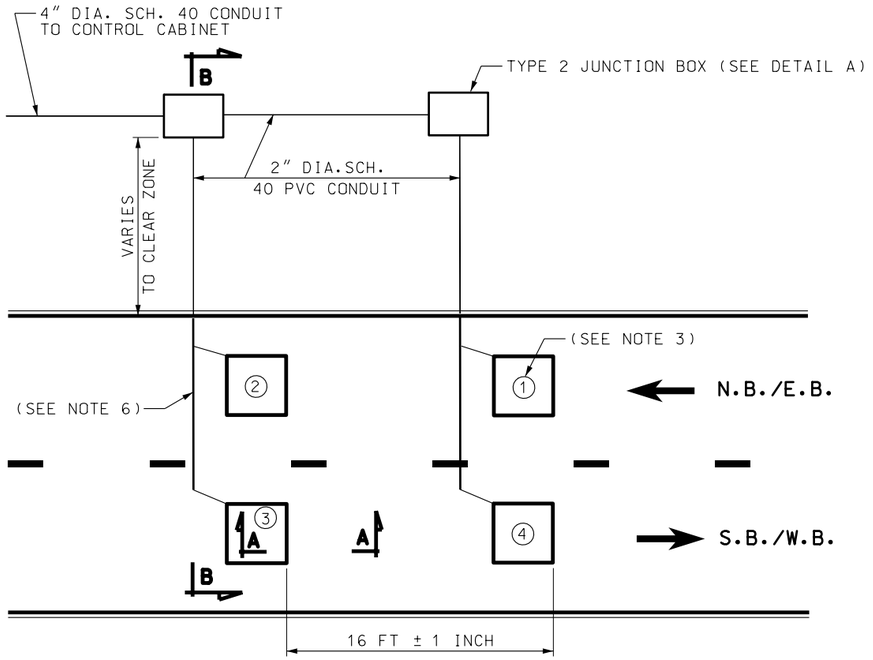
RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

CHAIRMAN STANDARDS COMMITTEE
APPROVED — DEC.19,2002 DATE

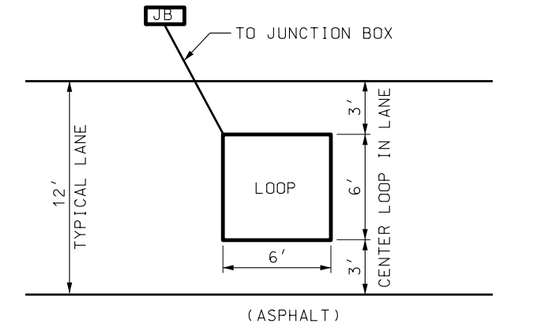
DEPUTY DIRECTOR

PAVEMENT/APPROACH SLAB DETAILS
STANDARD DRAWING TITLE

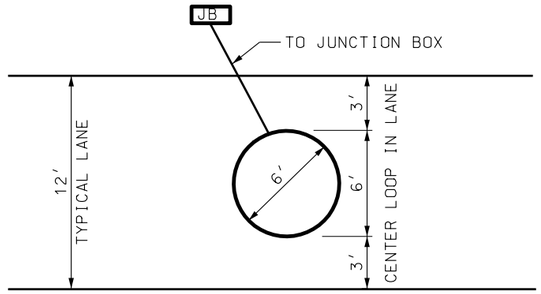
STD DWG
PV 2



PLAN VIEW



(ASPHALT)

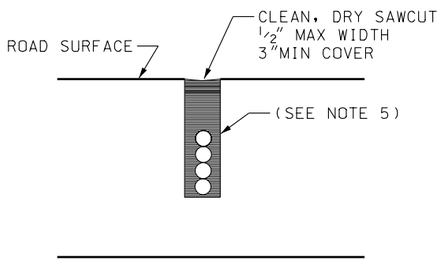


(PORTLAND CEMENT CONCRETE PAVEMENT
OR ASPHALT PAVEMENT

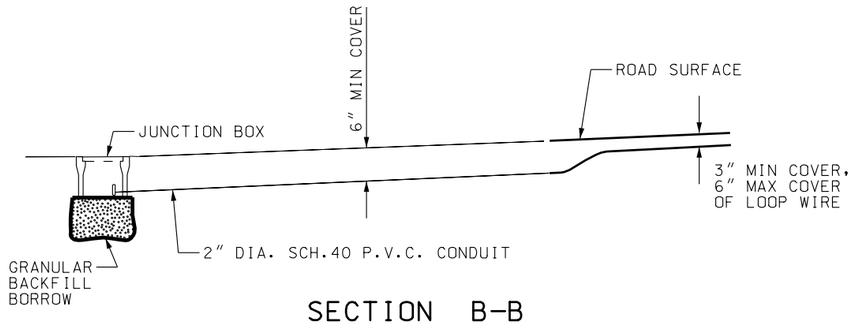
TYPICAL LOOP DETAIL

NOTES:

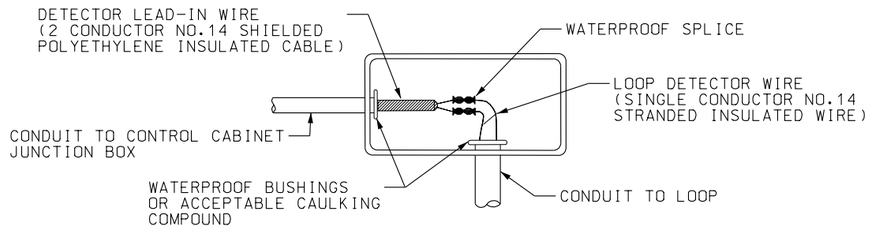
1. PRIOR TO CONSTRUCTION CONTACT UDOT TRAFFIC MONITORING SUPERVISOR, (801)964-4532.
2. SEE PLAN SHEETS FOR DETECTOR LOOP LOCATIONS, STATION AND OFFSET GIVEN FOR CENTER LOOP- ADJUST LOOP PLACEMENT TO AVOID CRACKED SLABS OR CUTTING THROUGH JOINTS.
   .
3. TAG EACH LOOP WIRE IN EACH JUNCTION BOX. NUMBER EACH LOOP CONSECUTIVELY. BEGIN WITH FIRST LOOP IN NORTH BOUND (EAST BOUND) LANE. CLOSEST TO SHOULDER - IN DIRECTION OF TRAFFIC. THEN SECOND LOOP IN SAME LANE, THEN ADJACENT LANE, ENDING WITH SECOND LOOP IN OPPOSITE DIRECTION LANE CLOSEST TO SHOULDER.
4. USE SEPARATE WIRE FOR EACH LOOP. EACH LOOP WIRE TO BE CONTINUOUS, WITH NO SPLICES, EXCEPT WITH THE LEAD-IN WIRE AT THE JUNCTION BOX.
5. ALL LOOPS TO HAVE FOUR TURNS OF WIRE IN THE SAME DIRECTION, COUNTER CLOCKWISE, WITHOUT ANY TWIST.
6. TWIST WIRES BETWEEN LOOP AND JUNCTION BOX. ONE TWIST PER FOOT IN SAW CUT, THREE TWISTS PER FOOT IN CONDUIT.



SECTION A-A



SECTION B-B



DETAIL "A"

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/08/02	G.K	REVISED NOTES 1 AND 2

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

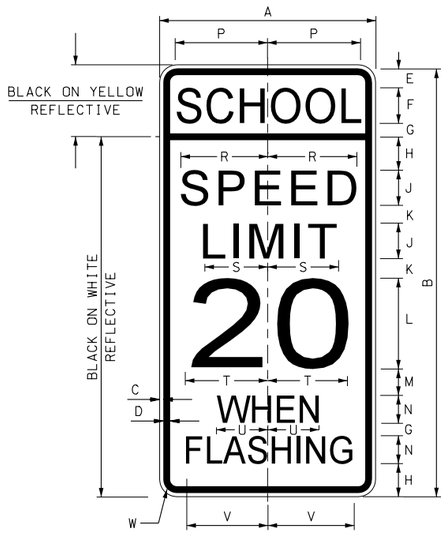
CHAIRMAN STANDARDS COMMITTEE
APPROVED — DEC.19,2002 DATE

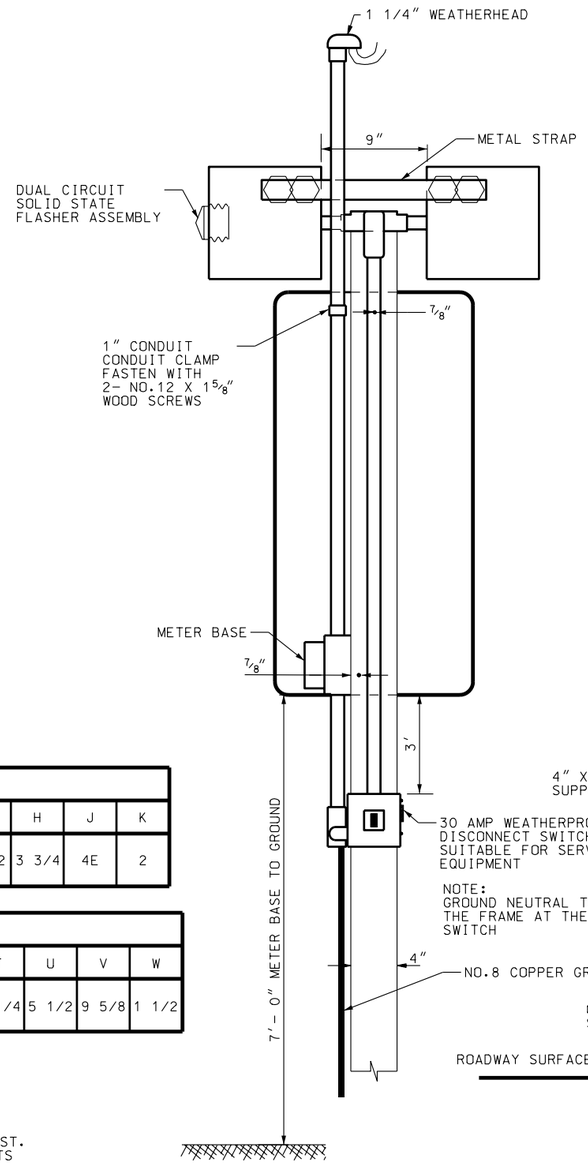
DEPUTY DIRECTOR

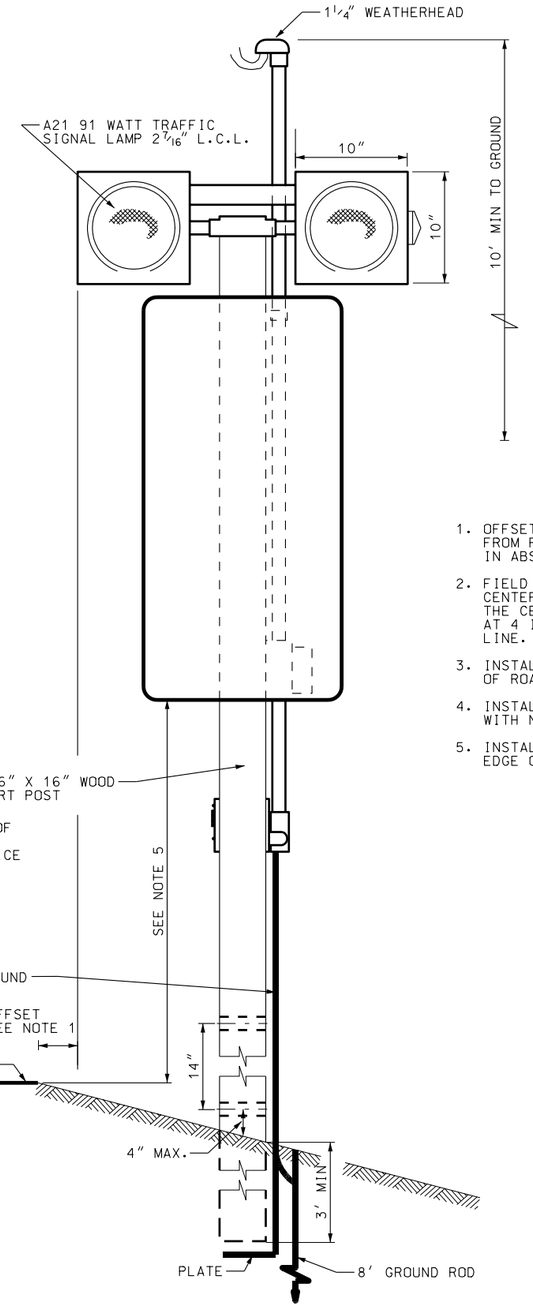
TRAFFIC COUNTING
LOOP DETECTOR
DETAIL

STANDARD DRAWING TITLE

STD DWG
SL 13







SIGN	DIMENSION (INCHES)									
	A	B	C	D	E	F	G	H	J	K
STANDARD OR MINIMUM	24	48	3/8	3/4	2 1/2	4D	1 1/2	3 3/4	4E	2

SIGN	DIMENSION (INCHES)									
	L	M	N	P	R	S	T	U	V	W
STANDARD OR MINIMUM	10E	3	3D	10	9 5/8	7 5/16	9 1/4	5 1/2	9 5/8	1 1/2

ASSEMBLY

1- PLACE TOP OF SIGN 8" BELOW TOP OF SUPPORT POST. ATTACH TO POSTS WITH 4- 7"X3/8" BOLTS WITH NUTS AND WASHERS.

INSTALLATION

1. OFFSET SIGN ASSEMBLY A MINIMUM OF 1.5 FT. FROM FACE OF CURB OR 6 FT. FROM TRAVELED WAY IN ABSENCE OF CURB.
2. FIELD DRILL TWO 1 1/2" DIAMETER HOLES IN THE CENTER OF THE POST. DRILL PERPENDICULAR TO THE CENTER LINE OF THE ROAD. PLACE ONE HOLE AT 4 INCHES AND ONE AT 18 INCHES ABOVE GROUND LINE.
3. INSTALL FACE OF SIGN AT 90° ANGLE TO THE EDGE OF ROADWAY.
4. INSTALL POWER SUPPLY (120 VOLTS) IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
5. INSTALL SIGN 7 FEET AS MEASURED FROM THE NEAREST EDGE OF ROADWAY SURFACE TO BOTTOM OF SIGN.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/31/02	G.S.	UPDATED THE BREAKAWAY HOLE HEIGHT REQUIREMENT TO AASHTO STANDARD IN NOTE 2 AND DETAIL

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

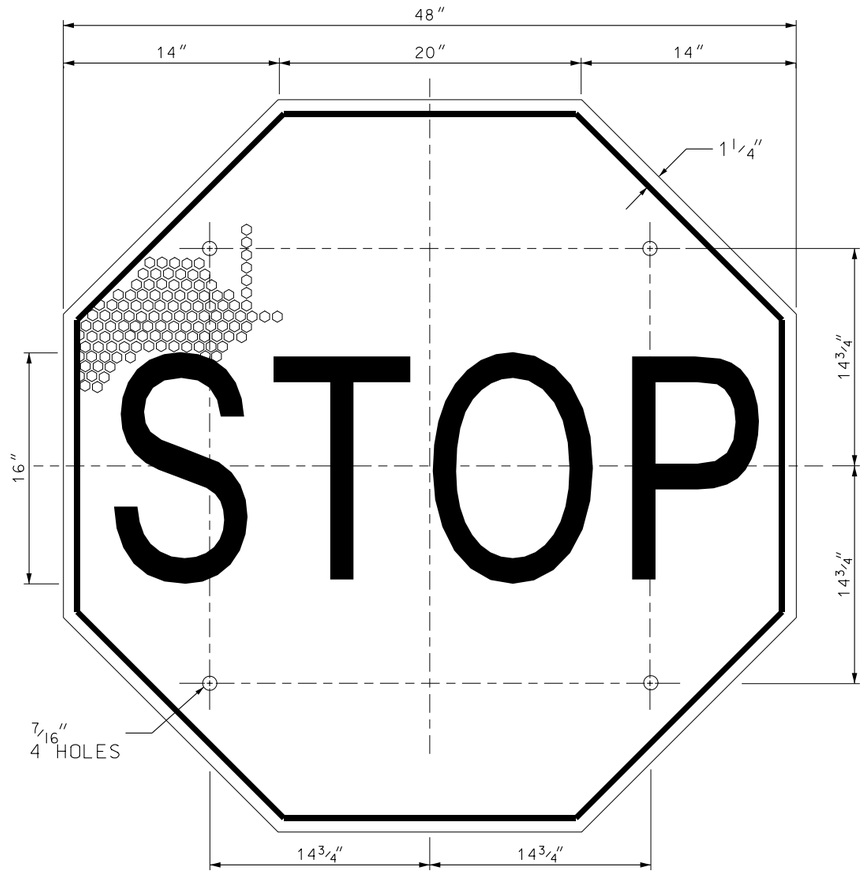
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

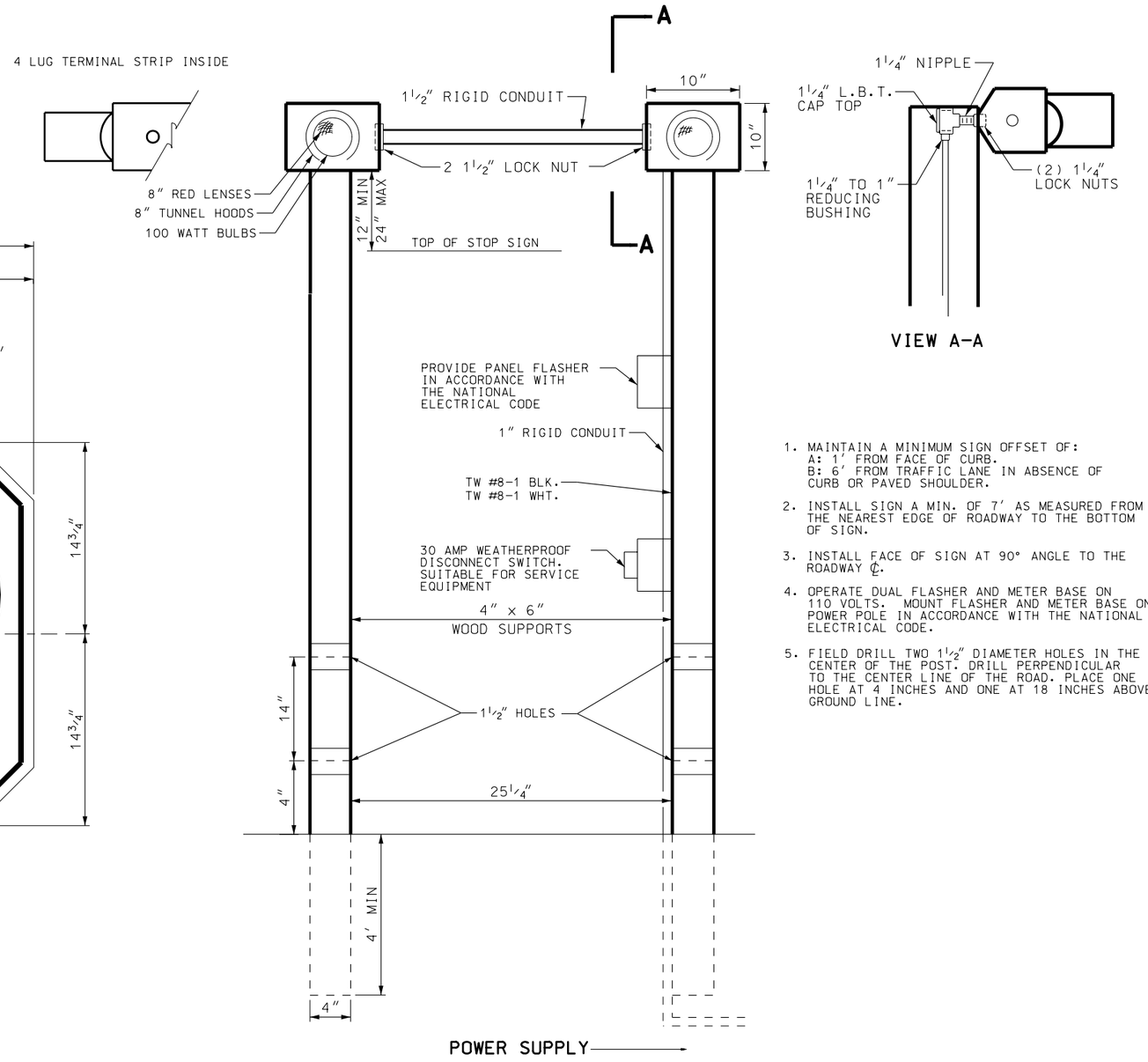
DEPUTY DIRECTOR

FLASHING SCHOOL SIGN

STANDARD DRAWING TITLE

STD DWG
SN 2





VIEW A-A

1. MAINTAIN A MINIMUM SIGN OFFSET OF:
   A: 1′ FROM FACE OF CURB.
   B: 6′ FROM TRAFFIC LANE IN ABSENCE OF CURB OR PAVED SHOULDER.
2. INSTALL SIGN A MIN. OF 7′ AS MEASURED FROM THE NEAREST EDGE OF ROADWAY TO THE BOTTOM OF SIGN.
3. INSTALL FACE OF SIGN AT 90° ANGLE TO THE ROADWAY ℄.
4. OPERATE DUAL FLASHER AND METER BASE ON 110 VOLTS. MOUNT FLASHER AND METER BASE ON POWER POLE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. FIELD DRILL TWO 1½″ DIAMETER HOLES IN THE CENTER OF THE POST. DRILL PERPENDICULAR TO THE CENTER LINE OF THE ROAD. PLACE ONE HOLE AT 4 INCHES AND ONE AT 18 INCHES ABOVE GROUND LINE.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	G.S.	UPDATED THE BREAKAWAY HOLE HEIGHT REQUIREMENT TO AASHTO STANDARD IN NOTE 5 AND DETAIL.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC. 19, 2002 DATE

CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC. 19, 2002 DATE

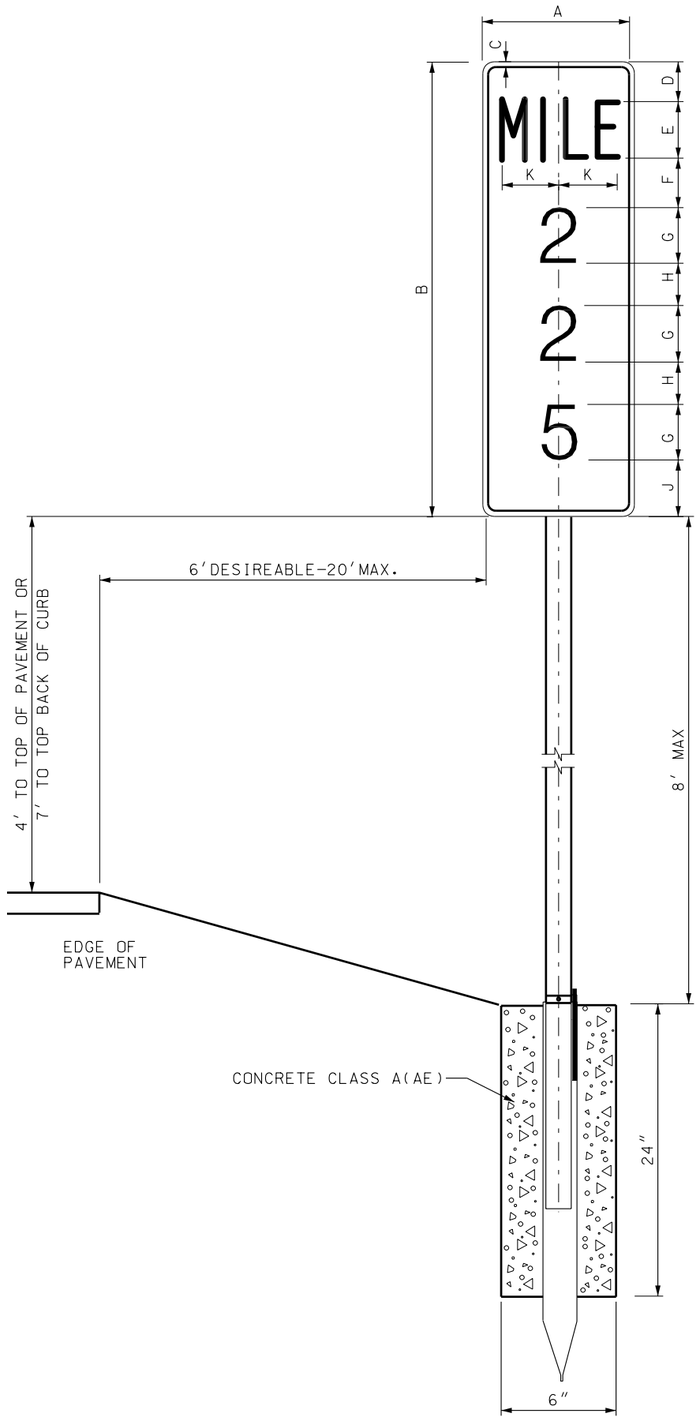
DEPUTY DIRECTOR

FLASHING STOP SIGN

STANDARD DRAWING TITLE

STD DWG
SN 4

D10-3



TYPICAL INSTALLATION

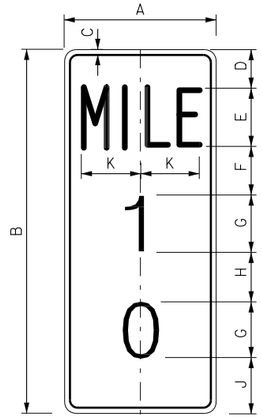
D10-3

A	B	C	D
10	30	0.38	3
12	48	0.38	2.2

E	F	G	H
4B	3	4D	2.5
5D	2.8	10D	2.8

J	K	L	
3	3.9	1.5	
2.5	4.9	1.5	

D10-2

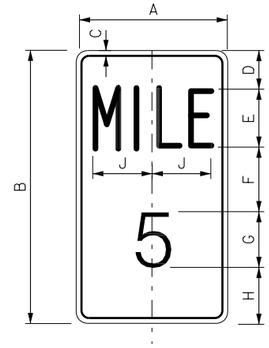


A	B	C	D
10	24	0.38	3
12	36	0.38	3

E	F	G	H
4B	3	4D	3
5D	2.5	10D	2.5

J	K	L
3	3.9	1.5
3	4.9	1.5

D10-1



A	B	C	D
10	18	0.38	2.5
12	24	0.38	3

E	F	G	H
4B	4	4D	3.5
5D	3	10D	3

J	K
3.9	1.5
4.9	1.5

NOTES:

1. USE: 12″ WIDE FOR INTERSTATE
   10″ ALL OTHER HIGHWAYS.
2. REFLECTORIZED WHITE LEGEND AND BORDER ON A REFLECTORIZED GREEN BACKGROUND.
3. DO NOT EXCEED 8′ MOUNTING HEIGHT FROM BOTTOM OF SIGN TO THE GROUND WHILE MAINTAINING 4′ MINIMUM HEIGHT ABOVE PAVEMENT EDGE.
4. USE "TUBULAR STEEL SIGN POST (P2)". FASTEN PANEL WITH 5/16″x 3″ S.S. BOLT; LOCK NUT, USE 5/16″ NYLON WASHER AGAINST SIGN FACE.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/13/02	L.B.	REVISED ENTIRE SHEET

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

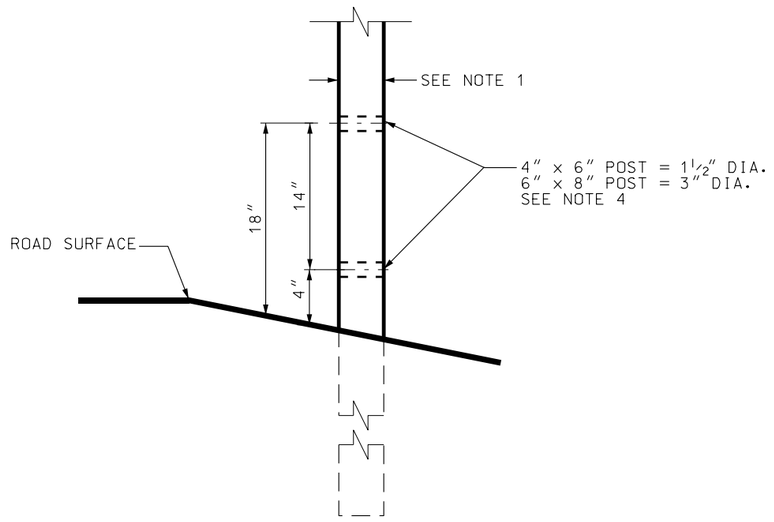
RECOMMENDED FOR APPROVAL — DEPUTY DIRECTOR — DEC.19,2002 DATE

CHAIRMAN STANDARDS COMMITTEE
APPROVED — DEC.19,2002 DATE

TYPICAL INSTALLATION FOR MILEPOST SIGNS

STANDARD DRAWING TITLE

STD DWG
SN 5

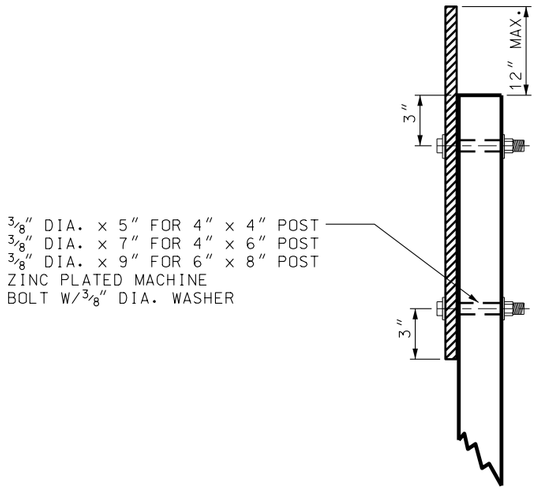


WEAKENED POST DETAIL
SEE NOTE 3

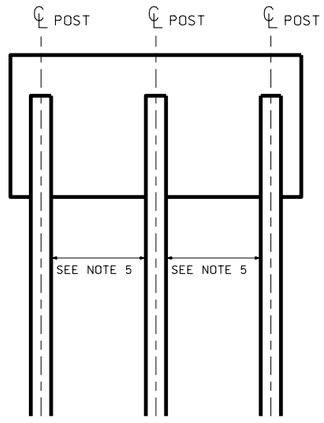
TIMBER SIGN POSTS (Nominal)

VERTICAL SIGN DIMENSION (inches) \ HORIZONTAL SIGN DIMENSION (inches)	12	24	36	48	60	72	84	96	108	120	132	144
12	1 – 4x4 4	1 – 4x4 4	1 – 4x4 4	1 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4
18	1 – 4x4 4	1 – 4x4 4	1 – 4x4 4	1– 4x6 4	2 – 4x4 4	2 – 4x4 4	2 – 4x4 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4
24	1 – 4x4 4	1 – 4x4 4	1– 4x6 4	1– 4x6 4	2 – 4x4 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4
30	1 – 4x4 4	1 – 4x4 4	1– 4x6 4	1– 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	3 – 4x6 4	3 – 4x6 4
36	1 – 4x4 4	1– 4x6 4	1– 4x6 4	1– 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	3 – 4x6 4	3 – 4x6 4	3 – 4x6 4	3 – 4x6 4
42	1 – 4x4 4	1– 4x6 4	1– 4x6 4	1– 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4	3 – 4x6 4	3 – 4x6 4	3 – 4x6 4	2 – 6x8 5	2 – 6x8 5
48	1 – 4x4 4	1– 4x6 4	1– 4x6 4	2 – 4x6 4	2 – 4x6 4	2 – 4x6 4		3 – 4x6 4	3 – 4x6 4	2 – 6x8 4	2 – 6x8 5	2 – 6x8 5
54	1 – 4x4 4	1– 4x6 4	1– 6x8 5	2 – 4x6 4	2 – 4x6 4	1– 6x8 5		2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	2 – 6x8 5
60	1– 4x6 4	1– 4x6 4	1– 6x8 5	2 – 4x6 4	1– 6x8 5	1– 6x8 5		2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	2 – 6x8 5
66	1– 4x6 4	1– 4x6 4	1– 6x8 5	2 – 4x6 4	1– 6x8 5			2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	2 – 6x8 5	
72	1– 4x6 4	1– 6x8 5	1– 6x8 5	1– 6x8 5	1– 6x8 5			2 – 6x8 5	2 – 6x8 5	2 – 6x8 5		

LEGEND: 2 – 4x6 / 5 — NUMBER & SIZE (inch x inch) OF POSTS; EMBEDMENT DEPTH IN FEET



SIDE VIEW



MULTIPLE POST SIGN

NOTES:

1. NARROW POST DIMENSION TO FACE TRAFFIC.
2. USE ONE 4″x 6″ POST FOR MULTIPLE SIGN INSTALLATION ON SINGLE POST, EXCLUDING ROUTE MARKERS.
3. MINIMUM DEPTH OF EMBEDMENT: 4′ UNLESS 5′ IS SHOWN.
4. FIELD DRILL TWO HOLES IN THE CENTER OF THE POST. DRILL PERPENDICULAR TO THE CENTER LINE OF THE ROAD.
5. MINIMUM SPACING BETWEEN POST:

	POST SIZE	SPACING
FOR 3 OR MORE POSTS	4″ x 4″	= 4′
FOR 3 OR MORE POSTS	4″ x 6″	= 4′
FOR 2 OR MORE POSTS	6″ x 8″	= 7′

REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/31/02	G.S.	UPDATED THE BREAKAWAY HOLE HEIGHT REQUIREMENT TO AASHTO STANDARD IN WEAKENED POST DETAIL

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

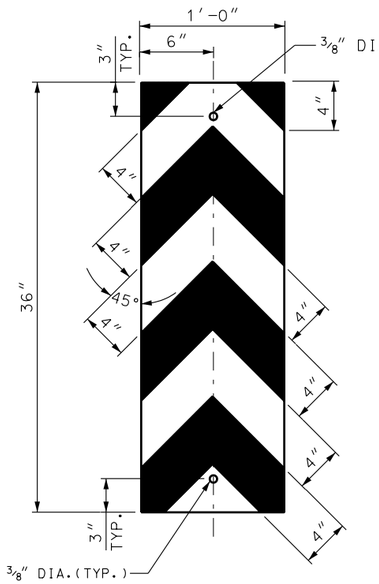
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

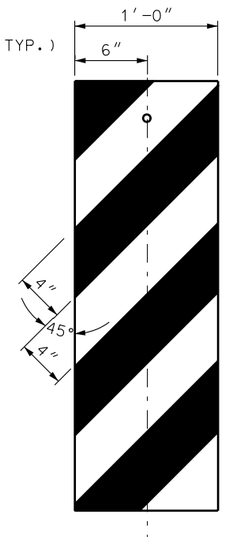
GROUND MOUNTED TIMBER SIGN POST (P1)

STANDARD DRAWING TITLE

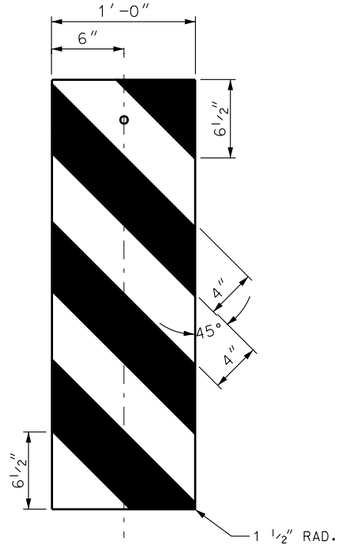
STD DWG
SN 8



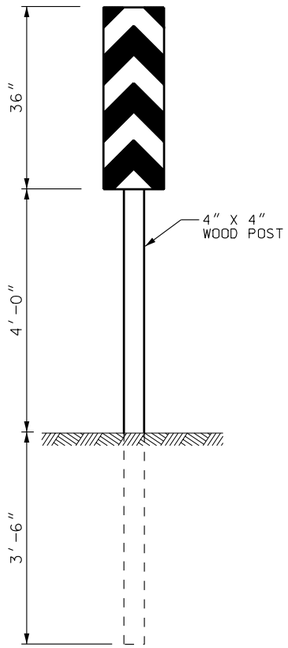
TRAFFIC PASS EITHER SIDE
OM-3C

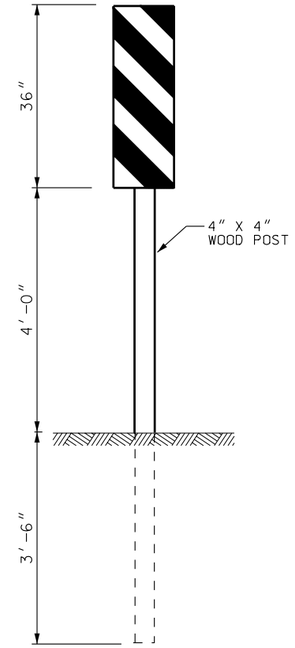


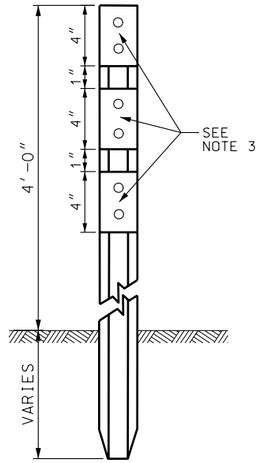
TRAFFIC PASS LEFT
OM-3R



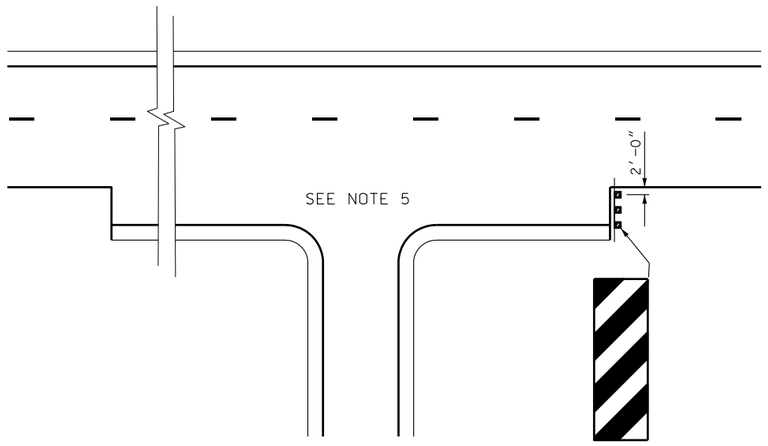
TRAFFIC PASS RIGHT
OM-3L



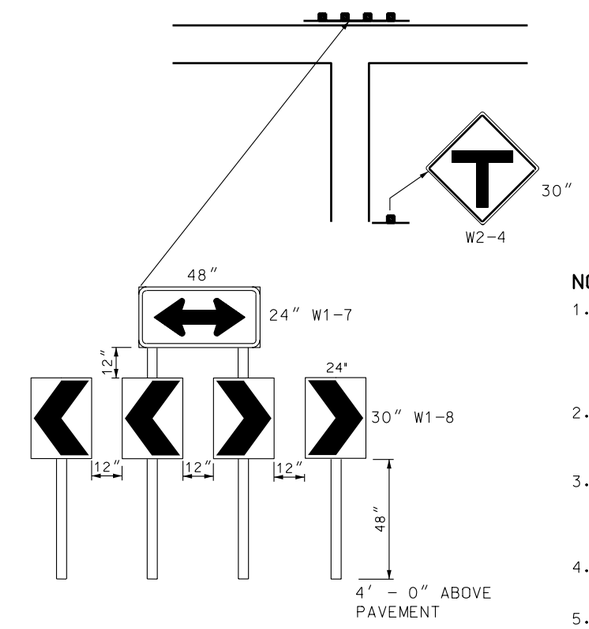




BARRIER MARKER
SEE NOTE 2



PAVEMENT TRANSITION



'T' INTERSECTION GUIDANCE

NOTES:

1. USE OM-3C, OM-3R, OR OM-3L TO MARK THE ENDS OF OBSTRUCTIONS SUCH AS NARROW BRIDGES,CULVERTS,ETC. FOR NARROW BRIDGES INSTALL THE MARKER ON EACH SIDE OF BOTH ENDS OF BRIDGE ON TWO-WAY ROADWAYS, AND ON EACH SIDE OF THE APPROACH END OF BRIDGE ON ONE-WAY ROADWAYS.
2. USE BARRIER MARKER TO MARK THE APPROACH TO THE ENDS OF BARRIERS THAT DO NOT HAVE AN ATTENUATOR OR END SECTION INSTALLED.
3. USE REFLECTIVE SHEETING CONFORMING TO SECTION 02891 OF THE STATE OF UTACH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. USE REFLECTIVE YELLOW SHEETING OVER NON-REFLECTIVE BLACK SHEETING.
4. INSTALL THREE YELLOW DELINEATOR PLATES IN ACCORDANCE WITH STD DWG GW 9.
5. ATTACH CHEVRON ALIGNMENT PANELS & OBJECT MARKERS TO POST WITH VANDAL RESISTANT FASTENERS.
6. THE TRAFFIC ENGINEER DETERMINES PAVEMENT MARKINGS AND STRIPING FOR PAVEMENT TRANSITION.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/08/02	G.S.	CORRECTED NOTE IN "PAVEMENT TRANSITION" 6' TO 6'

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

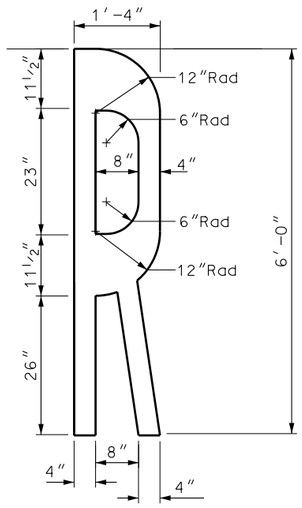
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

OBJECT MARKERS
"T" INTERSECTION & PAVEMENT TRANSITION GUIDANCE

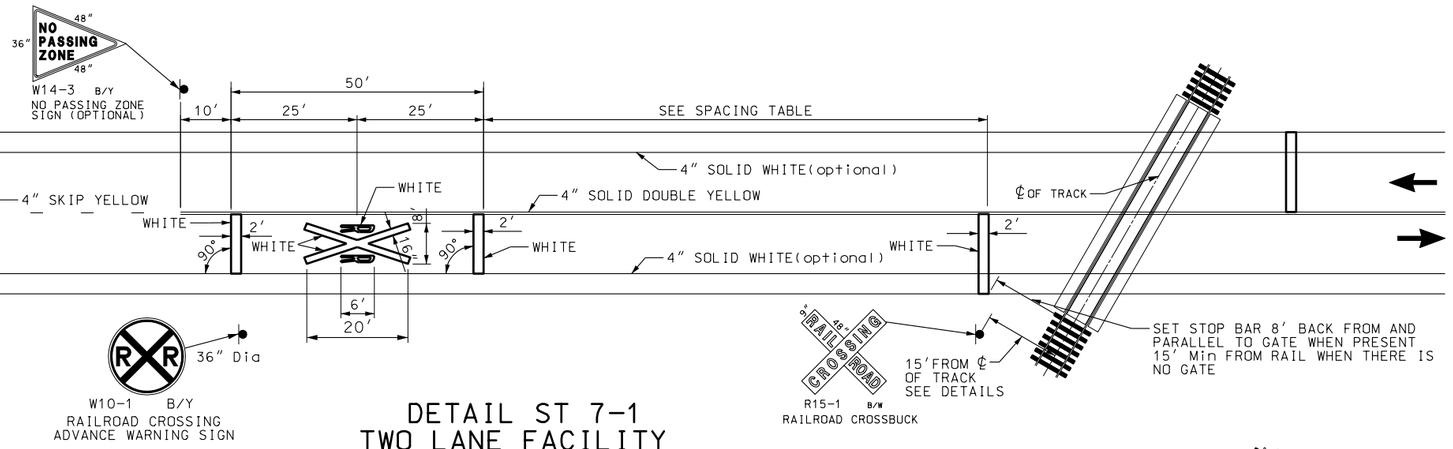
STANDARD DRAWING TITLE

STD DWG
ST 1

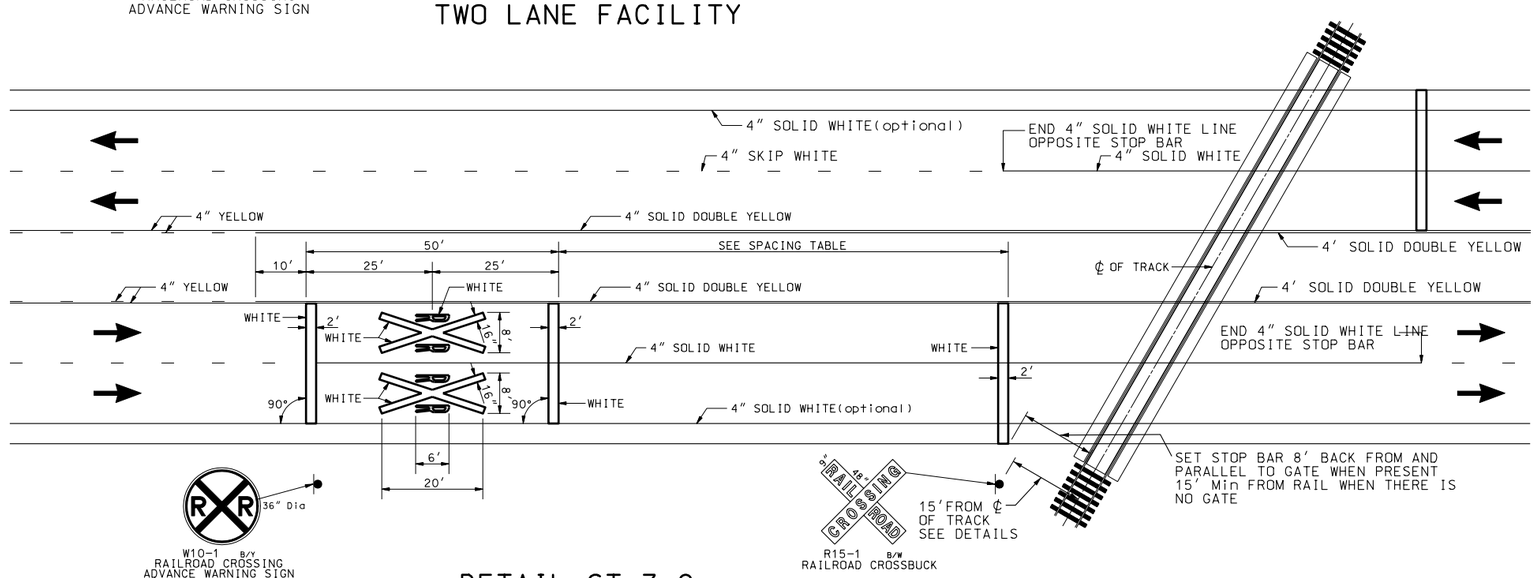


SPACING TABLE

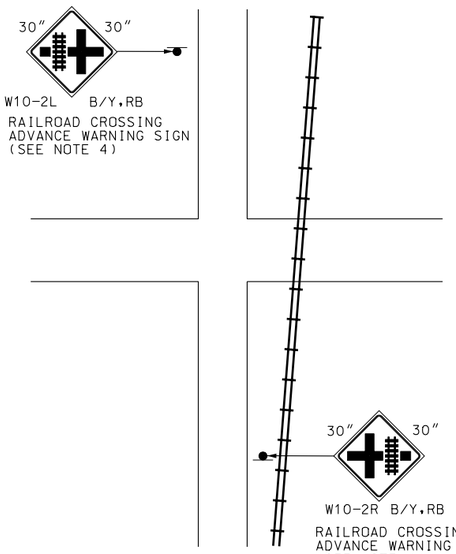
SPEED LIMIT MPH	MIN. DISTANCE (feet)
65 - 70	750
55 - 60	550
45 - 50	375
35 - 40	225
25 - 30	100

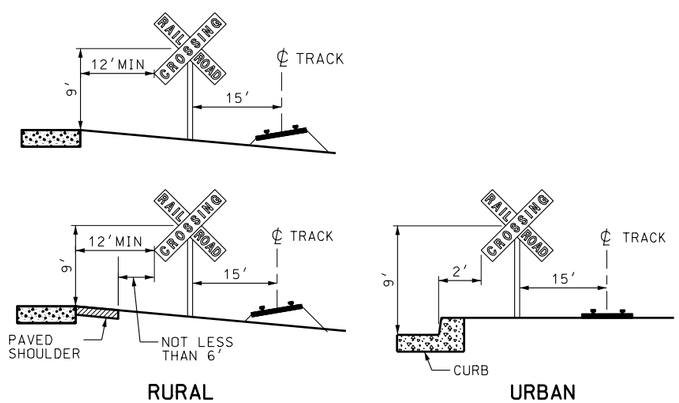


DETAIL ST 7-1
TWO LANE FACILITY



DETAIL ST 7-2
MULTI LANE FACILITY





DETAILS

NOTES:

1. PLACE PAVEMENT MARKINGS, CONSISTING OF AN "RXR", TRANSVERSE LINES, AND NO-PASSING MARKINGS. USE MARKINGS IN EACH APPROACH LANE ON ALL PAVED APPROACHES TO GRADE CROSSING WHERE GRADE CROSSING SIGNALS OR AUTOMATIC GATES ARE PRESENT AND AT ALL OTHER GRADE CROSSINGS WHERE THE SPEED IS 40 MPH OR GREATER. PLACE PAVEMENT MARKINGS AT OTHER CROSSINGS AS DIRECTED BY THE REGION TRAFFIC ENGINEER.
2. EXTEND TRANSVERSE LINES ACROSS ALL APPROACH LANES ON MULTI-LANE ROADS. USE INDIVIDUAL "RXR" MARKINGS IN EACH APPROACH LANE.
3. USE AN ADDITIONAL W10-1 ON CROSS STREET WHEN AN INTERSECTION IS LOCATED BETWEEN THE W10-1 AND THE GRADE CROSSING.
4. USE W10-2 SIGN WHERE THERE IS NOT A W10-1 SIGN BETWEEN THE INTERSECTION AND GRADE CROSSING.
5. USE STANDARD ALPHABET FOR HIGHWAY SIGN AND PAVEMENT MARKINGS FOR DIMENSIONS OF RAILROAD PAVEMENT MARKINGS.

REVISIONS

NO.	DATE	APPR.	REMARKS
1	08/13/02	B.A.	CORRECT TYPO IN DETAIL ST 7-1

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

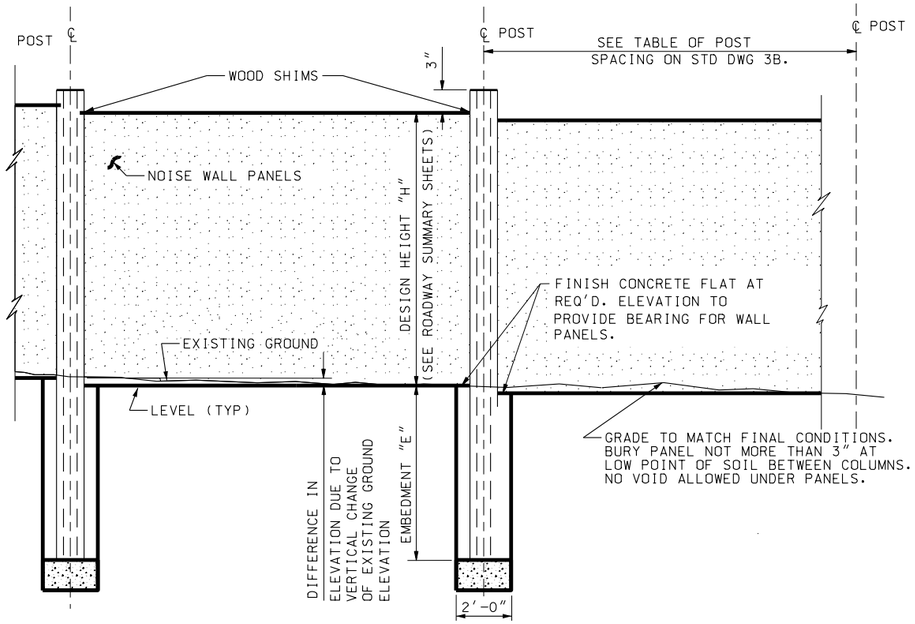
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

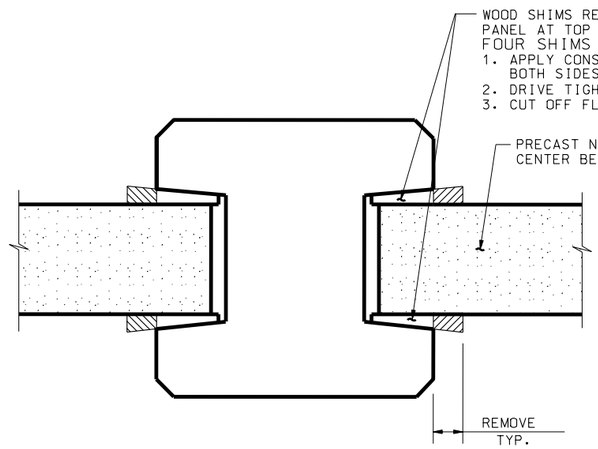
PAVEMENT MARKINGS AND SIGNS AT RAILROAD CROSSING

STANDARD DRAWING TITLE

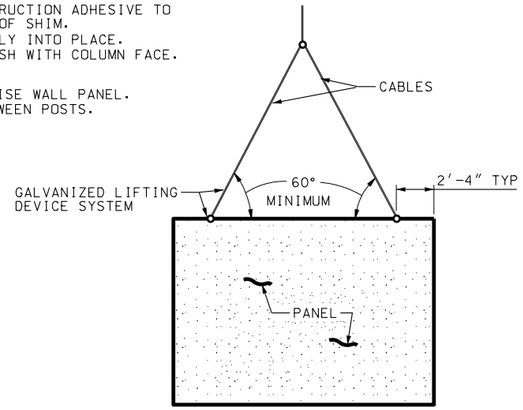
STD DWG
ST 7



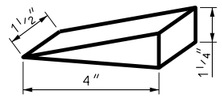
TYPICAL ELEVATION



POST PANEL DETAIL



LIFTING DEVICE DETAIL



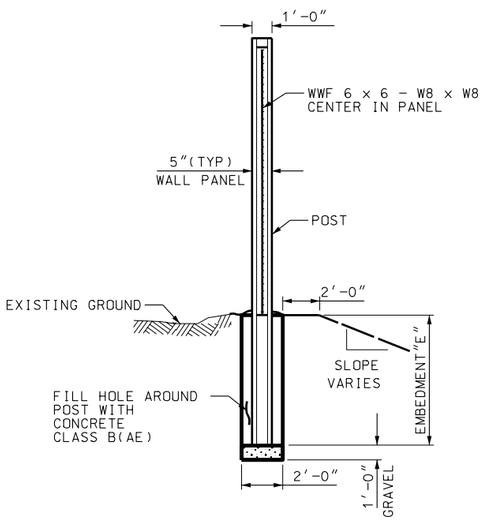
WOOD SHIM DETAIL

NOTES:

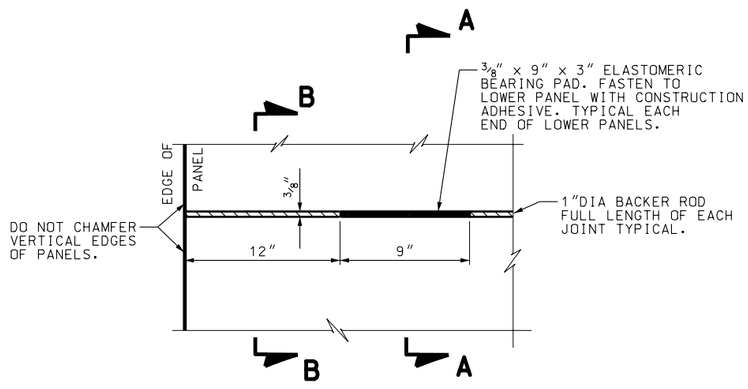
1. CHAMFER EXPOSED CONCRETE CORNERS AS SHOWN.
2. PROVIDE 2 " COVER TO REINFORCING STEEL EXCEPT WHERE NOTED OTHERWISE.
3. SEE ROADWAY PLANS FOR LOCATION AND HEIGHT OF PRECAST NOISE WALL.
4. ALL PANELS ARE 11'-5" LONG AND 5"THICK.
5. SEE STD DWG SW 2 "NOISE WALL PLACEMENT AREA" FOR ADDITIONAL PLACEMENT INFORMATION.

DESIGN DATA

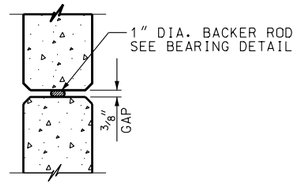
AASHTO GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS.
CONCRETE CLASS 4A(AE) f'c= 5,000 psi; fs (REINF.)= 24,000 psi; n=8.
CONCRETE CLASS B(AE) f'c= 2,500 psi (FOR HOLES AROUND POSTS ONLY).



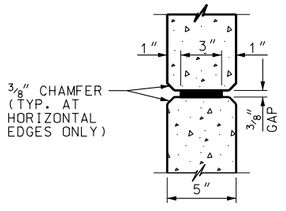
TYPICAL SECTION



BEARING DETAIL



SECTION B-B



SECTION A-A

REVISIONS			
NO.	DATE	APPR.	REMARKS
1	12/19/02	B.W.	CORRECTED PANEL LENGTH IN NOTE 4

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

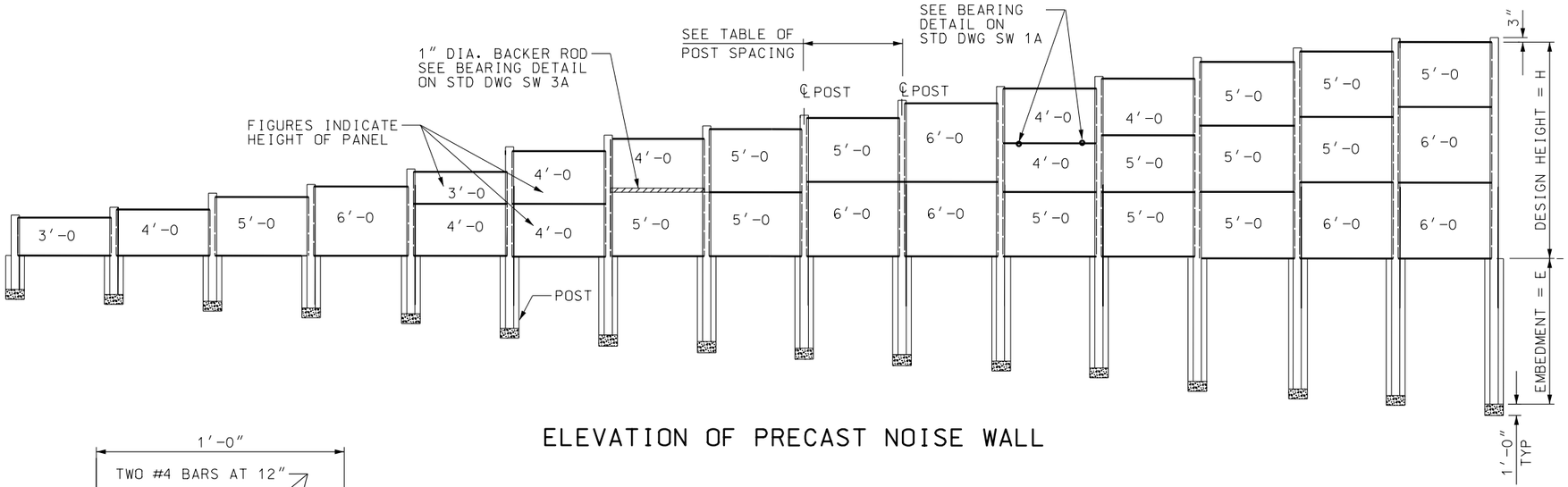
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

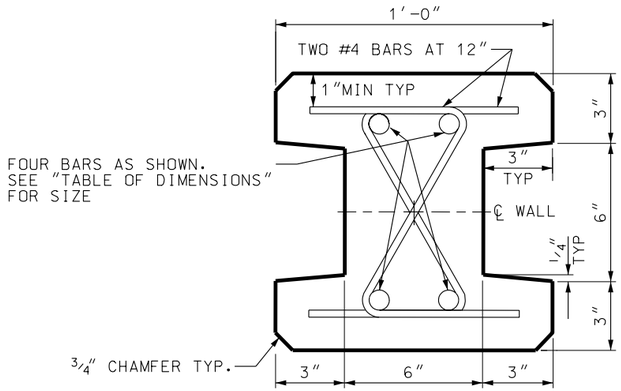
PRECAST CONCRETE NOISE WALL 1 OF 2

STANDARD DRAWING TITLE

STD DWG
SW 3A

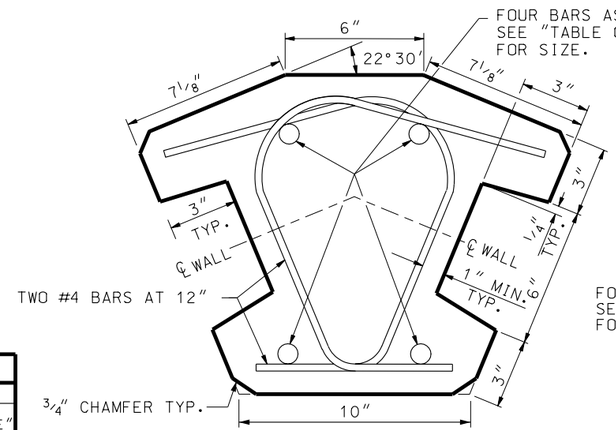


ELEVATION OF PRECAST NOISE WALL



SECTION THRU TYPE I POST
θ = 0° TO 10°

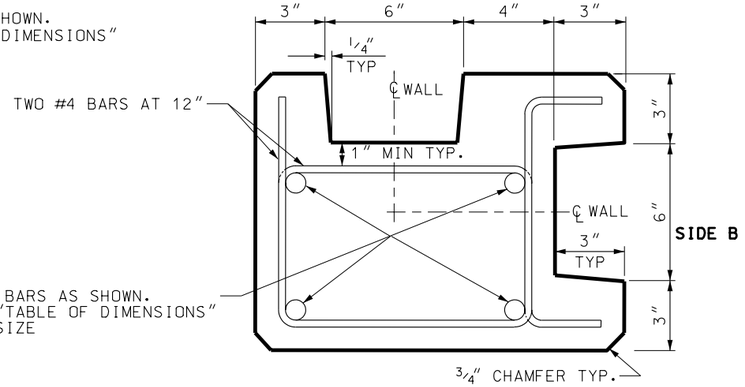
TABLE OF DIMENSIONS					
DESIGN H	PANEL HEIGHT			POST	
H	TOP PANEL	CENTER PANEL	BOTTOM PANEL	VERTICAL BAR SIZE	EMBEDMENT "E"
3'	3'			#5	1'-6
4'	4'			#5	2'-0
5'	5'			#5	2'-6
6'	6'			#5	3'-0
7'	3'		4'	#5	3'-6
8'	4'		4'	#5	4'-0
9'	4'		5'	#5	4'-6
10'	5'		5'	#5	5'-0
11'	5'		6'	#6	5'-6
12'	6'		6'	#6	6'-0
13'	4'	4'	5'	#7	6'-6
14'	4'	5'	5'	#7	7'-0
15'	5'	5'	5'	#8	7'-6
16'	5'	5'	6'	#9	8'-0
17'	5'	6'	6'	#9	8'-6



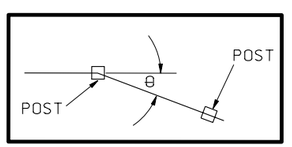
SECTION THRU TYPE II POST
FOR θ = 35° TO 55°

POST SPACING	
℄ POST TO ℄ POST	REQ'D SPACING
TYPE I	12'-0
TYPE I TO TYPE II	12'-2
TYPE I TO TYPE III SIDE A	12'-0
TYPE I TO TYPE III SIDE B	12'-4
TYPE II TO TYPE II	12'-4
TYPE II TO TYPE III SIDE A	12'-4
TYPE II TO TYPE III SIDE B	12'-6
TYPE III SIDE A TO TYPE III SIDE A	12'-0
TYPE III SIDE A TO TYPE III SIDE B	12'-4
TYPE III SIDE B TO TYPE III SIDE B	12'-8

SIDE A



SECTION THRU TYPE III POST
θ= 80° TO 100°



REVISIONS

NO.	DATE	APPR.	REMARKS
1	10/30/02	F.W.	CORRECTED STD DWG CALLOUT IN "ELEVATION OF PRECAST NOISE WALL" DETAIL TO SW 3A
2	12/19/02	B.W.	CORRECTED THE TO DEGREE IN SECTION THRU TYPE I POST

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

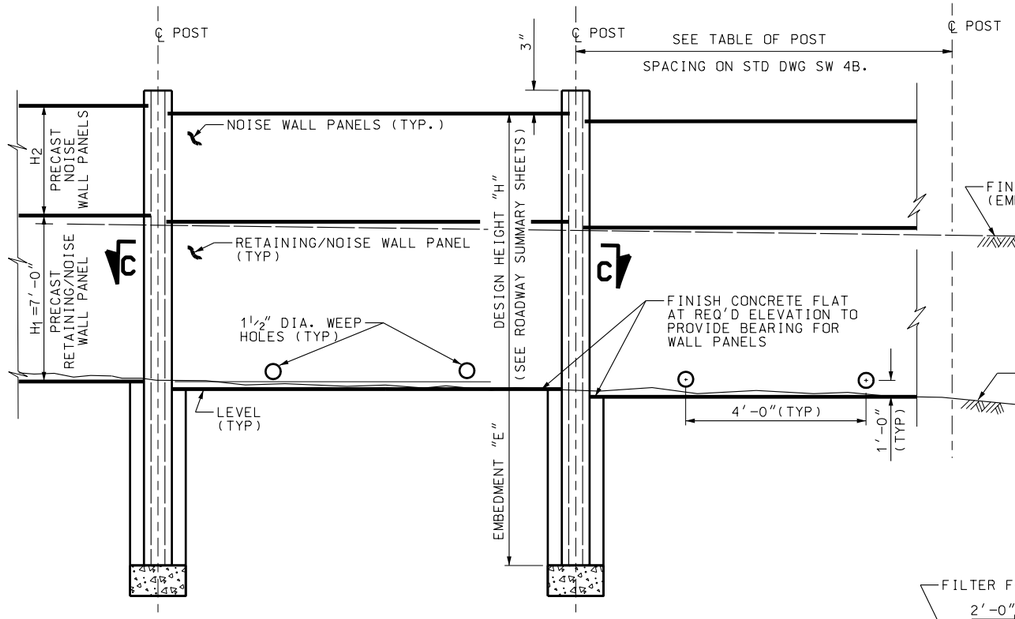
CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

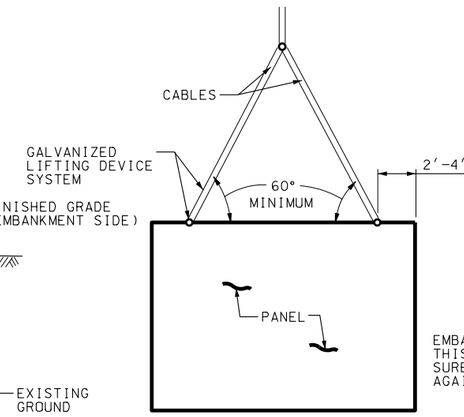
PRECAST CONCRETE NOISE WALL 2 OF 2

STANDARD DRAWING TITLE

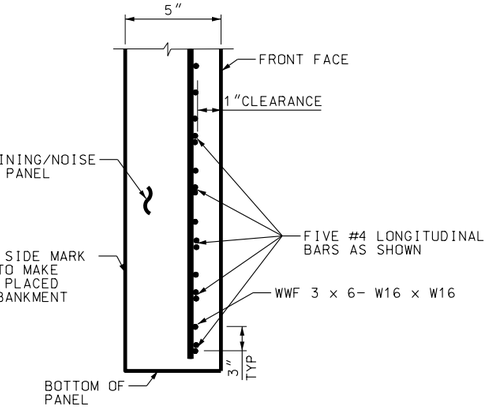
STD DWG
SW 3B



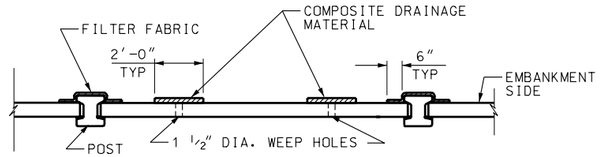
TYPICAL ELEVATION



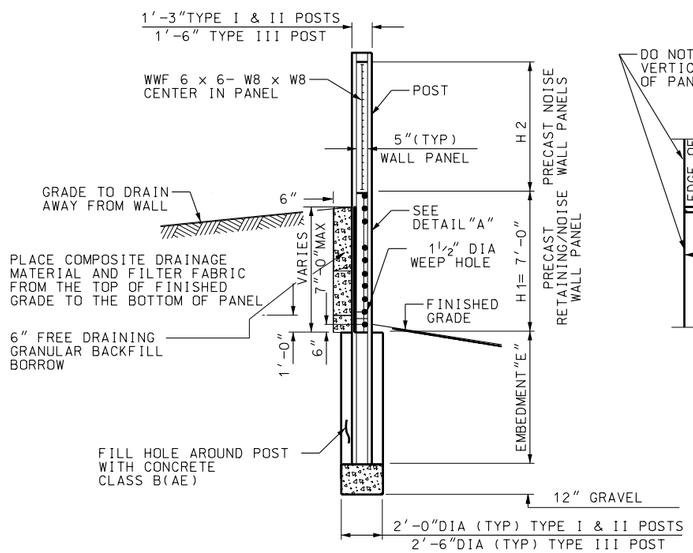
LIFTING DEVICE DETAIL



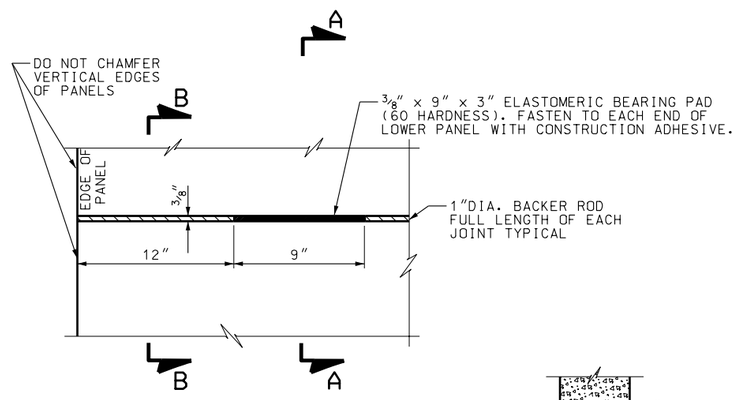
DETAIL "A"
(RETAINING/NOISE WALL PANEL ONLY)



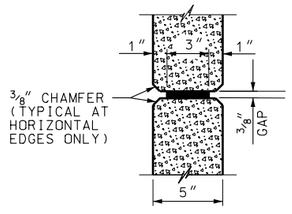
SECTION C-C



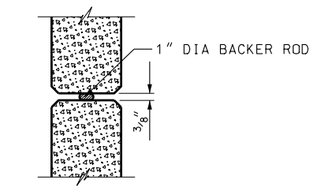
TYPICAL SECTION



BEARING DETAIL



SECTION A-A



SECTION B-B

NOTES:

1. CHAMFER EXPOSED CONCRETE CORNERS AS SHOWN.
2. PROVIDE 2" COVER TO REINFORCING STEEL EXCEPT WHERE NOTED OTHERWISE.
3. SEE ROADWAY PLANS FOR LOCATION AND HEIGHT OF PRECAST RETAINING/NOISE WALL.
4. ALL PANELS ARE 11'-5" LONG AND 5" THICK.
5. SEE STD DWG SW 2 "NOISE WALL PLACEMENT AREA" FOR ADDITIONAL PLACEMENT INFORMATION.

DESIGN DATA

AASHTO GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS.
CONCRETE CLASS 4A(AE) f'c= 5,000 psi; fs (REINF.)= 24,000 psi; n=8.
CONCRETE CLASS B(AE) f'c= 2,500 psi (FOR HOLES AROUND POSTS ONLY)
EARTH PRESSURE = 36 lb./Ft^3

REVISIONS

NO.	DATE	APPR.	REMARKS
1	12/19/02	B.W.	CORRECTED PANEL LENGTH IN NOTE 4

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — DEC.19,2002 DATE

CHAIRMAN STANDARDS COMMITTEE APPROVED — DEC.19,2002 DATE

DEPUTY DIRECTOR

PRECAST CONCRETE RETAINING/NOISE WALL 1 OF 2

STANDARD DRAWING TITLE

STD DWG
SW 4A